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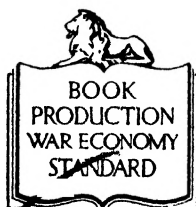
**U.S.S.R. SPEAKS FOR ITSELF**



U.S.S.R.  
SPEAKS FOR ITSELF

LAWRENCE & WISHART LTD.  
♦ LONDON

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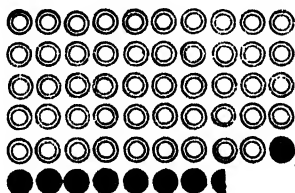
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## BUDGET OF THE

## REVENUE

216,840,000,000 *Rubles**Increase of 21% on previous year***TURNOVER TAX**on Industry and State and  
Co-operative Trade  
124,500 million rubles.**PROFITS TAX**

31,000 million rubles.

**STATE SOCIAL  
INSURANCE**

10,000 million rubles.

**STATE LOANS**

13,000 million rubles.

**INCOME AND  
AGRICULTURAL TAX**

10,842 million rubles.

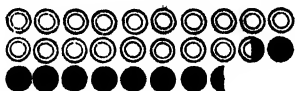
**OTHER ITEMS**

27,498 million rubles.

Each circle equals 1% or 2,168.4 million rubles.  
Black circles denote increase over previous year.

*The basic source of this diagram is the speech by  
U.S.S.R. made at the 8th Session*

## EXPENDITURE

216,052,000,000 *Rubles**Increase of 23% on previous year***NATIONAL ECONOMY**

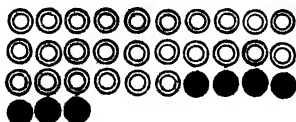
New Factories, Mines, Electric and Power Plants, Transport and Communications, Research, etc.

*59,320 million rubles.***AGRICULTURE**

Credits and Technical Equipment to Collective Farms, 387 New Tractor Stations, Experimental Stations, Irrigation, etc.

*13,580 million rubles.***SOCIAL AND CULTURAL SERVICES**

Education, Health, Pensions, Protection of Mothers and Children, Sanatoria and Rest Homes, etc.

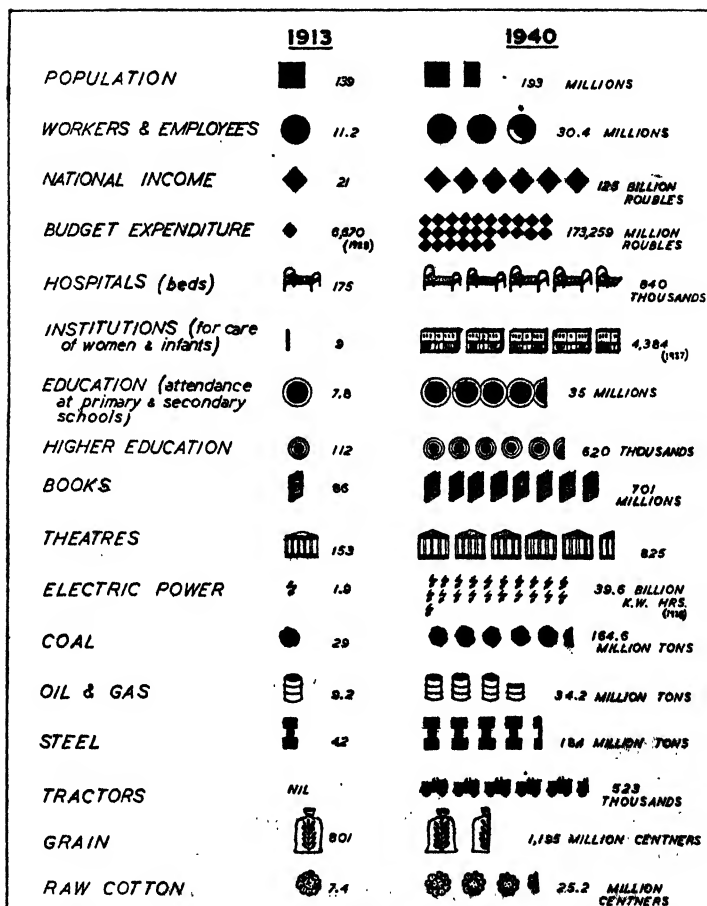
*47,800 million rubles.***DEFENCE***70,900 million rubles.***OTHER ITEMS***24,452 million rubles.*

Each circle equals 1% or 2,160-52 *million rubles.*  
 Black circles denote increase over previous year.

*Zverev, People's Commissar for Finance of the  
 the Supreme Soviet in February, 1941*

## GROWTH OF THE U.S.S.R.

1913 figures are represented by one unit



The statistics on which the above diagram is based are more recent than the figures used in the various articles. The basic sources for the diagram are U.S.S.R. STATISTICS (Moscow); AMERICAN REVIEW ON THE SOVIET UNION (June 1941) published in New York by the American Russian Institute; and the REPORT made by N. VOZNESENSKY to the 18TH ALL-UNION CONFERENCE OF THE C.P.S.U.(B), February 1941, which is included in this volume (pp. 21-55).

## PREFACE

*By Andrew Rothstein*

**I**N this book the reader will find an answer to many questions which have been asked in all countries, by millions of people, since June 22, 1941. When Hitler launched his treacherous attack against the Soviet Union the nations of the world suddenly realized that they knew little or nothing about the new adversary of Nazi Germany. Above all, they found they knew nothing of the strength of the Soviet Union, physical and moral, and were therefore in the dark about its prospects of resistance.

In all countries the people were told that this was because the Soviet Union was a land of mystery, which had kept its work and its achievements dark. This was untrue. The booklets reprinted in the following pages, which give a manifold if not exhaustive picture of the U.S.S.R. and its peoples, are only one piece of evidence. They were published in 1939, on the occasion of the New York World Fair. They were available in all countries and in all the leading European languages. It is not the fault of the Soviet Union if their lesson was not allowed to sink in.

When this Introduction is being written, towards the end of March, 1943, twenty-one months have passed since the Nazi attack on the U.S.S.R. The whole world has been amazed and awed by the strength displayed by the Soviet peoples in bearing alone almost the full weight of the German war machine by land and air. If now, in the light of that experience, the reader turns over the reports printed in this book, he cannot but realize that what seemed amazing to the rest of the world was only natural and to be expected by the peoples of the Soviet Union—and by those few in every country who did not scorn to listen to the Soviet Union's account of itself.

For the most part these reports were not written by skilled journalists, economists or publicists. They were

written by the ordinary people of the Soviet Union themselves, holding high position by reason of their distinguished work, but in very few cases experts in writing. The introductory chapter fills this gap. It gives a bird's-eye view of Soviet economy at the end of 1940, twelve to eighteen months after the compilation of the booklets intended for the New York Fair. The latter give a picture of the Soviet Union on the eve of the Second World War. The report by Voznesensky to the Eighteenth Conference of the Communist Party of the Soviet Union, in February, 1941, is a mirror of the Soviet Union on the eve of its own entry into the war.

Voznesensky's report speaks much more in the dry language of statistics and percentages than the vivid little personal reports written in 1939. But it tells the same story. From its pages emerge the same contours of a mighty state, immensely strong economically, but even stronger politically in the moral unity of its close-knit brotherhood of peoples, for whom class distinctions are a thing of the past.

. . . . .

Today it has become almost hackneyed to say that the Soviet Union has stood the test of war. It is worth, however, spending a moment or two on a closer examination of what the Soviet peoples have done in the course of the war. For all the special characteristics of Soviet society, which the reader can trace in the peacetime reports reproduced in this book, showed themselves with immense and decisive force in wartime conditions.

Let us take a few examples, drawn entirely from the news items in the Soviet Press during these twenty-one months.

The phenomenal rate of advance of Soviet industry, particularly of the war industries, was more than kept up. In spite of its loss of territory, the Soviet Union immensely increased its output of armaments, of coal, of electric power and of iron and steel. In the first six months of 1942

the Urals arms factories produced two or three times as much as in the whole of 1941, while in the second half-year they produced twice as many tanks, aircraft, guns and mortars as in the first half. Huge new centres of industry were built up in less than two years, all over the eastern areas of the U.S.S.R. Power stations were built in six weeks instead of eight months. New factories began output three to four months after the commencement of construction (*Pravda*, December 29, 1942). One factory produced eleven fighter squadrons over and above its year's plan; another, three squadrons. One artillery works, increasing its output eleven times compared with the output of 1941, turned out, over and above its plan for 1942, sufficient guns to equip ten artillery regiments and three tank brigades.

Thus the sphere of production showed the same breathless rate of increase as had already characterized Soviet economy in peacetime. If friend and foe had had a better appreciation of the latter, they would have been better prepared for the former.

These successes were all the more marked because they were won in exceptional conditions. Thousands of Soviet factories of all kinds were evacuated from the western regions, including some of the largest in the Soviet Union. Equipment and personnel travelled together: raw materials had to be transported in new directions: often the new plant was set up on a bare plain, with only rudimentary communications or power supply. Yet most of these factories resumed production before many weeks were out, and before very long were producing more than at their original sites.

This aspect of Soviet economy in wartime brought out, above all, that mass genius for improvisation, and that universal sense of personal responsibility for collective property, which were the triumph of Soviet economy in peacetime.

So, also, with agriculture. Millions of collective farmers were called up. Scores of thousands of tractors were taken for the Red Army, and repair shops had to concentrate on

war work. The most fertile areas of the Soviet Union—the Ukraine and the Kuban—were lost in 1942. Yet Soviet agriculture proved equal to the strain—contrary to the experience of the First World War, in which the area under main cereals dropped by 11 per cent, while the harvest dropped by 22 per cent.

In this war the cultivated area—apart from occupied territory—increased during the first twelve months by over five million acres. In the autumn of 1941 the area under winter crops had been extended by three and a quarter million acres; in the autumn of 1942 it was extended by another five and a quarter million acres. Three million people went into the country in 1942 for voluntary sowing and harvesting. Vast areas of virgin soil were broken up for the first time. The harvest was gathered much more rapidly in 1942 than in previous years. Sugar beet, potatoes and vegetables were produced in greater quantity. In the unoccupied areas the number of cattle went on increasing. Special areas were set aside in every collective and state farm, the produce of which went to the State Defence Fund.

What made all this possible? Primarily, the new public organization of agriculture, in state and co-operative (collective) farms, built up by 1939; and the new spirit of ownership which went with the new organization. This made it possible to tackle such problems as the large-scale replacement of men by women in agricultural management and control of machinery. It made possible the planned redistribution of available stocks of seeds, draught cattle, breeding stock, etc., to ensure that, with extra effort, the whole of the land available could be cultivated. It made possible the systematic reintroduction of hand labour where machinery was lacking, the timely delivery of state dues from the collective farms, the organization of autumn ploughing before the heavy snows, and so forth.

The close co-operation of Soviet science with the daily life of the people made possible the discovery of specially advantageous varieties of corn for sowing in the newly opened eastern regions (ten varieties of frost-resisting

winter rye, eight similar varieties of wheat, a 16 per cent increase in the weight per grain of millet, etc.). In the autumn of 1942, over 1,500 members of the All-Union Academy of Agricultural Science and agricultural lecturers of various universities toured the collective farms, organizing courses of instruction for team leaders. In this way did Soviet agriculture apply the lessons of peace, learned in twenty-five years of constructive effort, to the necessities of war.

Transport tells the same story. On many railways the burden of traffic increased five or ten times, compared with the pre-war years. They had the task of transporting colossal quantities of war supplies, vast numbers of troops, thousands of factories, and millions of the evacuated population. All foreign observers have been amazed at the smoothness with which this was done. One day the story will be adequately told of the hundreds of thousands of railwaymen and their families who joined in voluntary effort to ensure repairs out of local resources, the maximum economy of materials used on the lines and on rolling stock, the most rapid training of women and youths for the railways, etc. (*Bolshevik*, Nos. 17-18, September, 1942).

. . . . .

None of these basic branches of economy could have continued successfully without that active effort and initiative of the individual Soviet citizen, organized collectively on the largest scale, which is known as "Socialist emulation."

During the first months of the war the world heard of the "200-percenters," "400-percenters" and, finally, "1,000-percenters"—the workers who undertook to produce twice, three times, four times, and, finally, as much as ten times what they produced before, on the same machinery and in the same time. As in all forms of Socialist emulation, the secret was initiative and inventiveness in eliminating waste and rationalizing the production processes. In the spring of 1942 these efforts developed into the "All-Union Socialist Emulation for



Over-fulfilment of State Plans for War Production.” The Stalin Metallurgical Combine at Kuznetsk took the initiative for the iron and steel workers, chemical workers and miners. The famous Kirov Works (formerly the Putilov Works, transferred from Leningrad to “somewhere in the East”) sent out the challenge to tank and engine builders and armour-plate workers. Aircraft Factories Nos. 18 and 26 did the same for aircraft and aero-engine workers. In each case mass meetings in the shops, and then a works’ conference, went over the output capacity of each of these vast plants, and overhauled the programme of production in an upward direction. The results were embodied in letters, with thousands of signatures, challenging other plants in the industries concerned to do as well. Similar challenges went out from leading factories in other industries, from state farms and collective farms, to their fellow workers all over the country.

But it was not only in the form of output that Socialist emulation played a decisive part in the war. About 75 per cent of wartime workers had had no industrial experience (*Bolshevik*, No. 16, August, 1942). Several hundred factory and trade schools existed, but they were inadequate to train millions. In the majority of factories, the problem was solved by attaching each new worker, as he took his place at the bench, personally to one of the skilled workers for training. Groups of five or ten, according to their craft, were formed to acquire a minimum of technical knowledge under one of the technicians. After a period of training, each new worker was put through a test by the shop manager, technician and section foreman, to decide his grade. Hundreds of thousands of workers were trained in a very short time in this way. The account from which these facts have been taken emphasizes that such a method was only possible because a vast number of “teachers” existed—skilled workmen trained under the Five Year Plans—and they were determined to vie with each other in training the new workers (women and youths for the most part) as a patriotic duty to their own Socialist country.

The role of Soviet women must be mentioned in particular. In 1938 they represented 40.5 per cent of all engaged in industry: after two years of war they were well over half. The high degree of mechanization of the Soviet factories, the large network of child and welfare institutions, the principle of equal pay for equal work, facilitated the changeover. They became coal-cutters, electrical steel-welders, moulders in tube works and machine-tool operators. In agriculture they played no less significant a part. In the Tambov region alone in the spring of 1943, 170,000 women members of collective farms sent out a challenge to the whole country to Socialist emulation in the sowing and harvesting. They had behind them a remarkable wartime changeover, in which 50,000 women had stepped into leading positions in the collective farms of the region—400 of them as chairmen of collective farms, and 2,800 as directors of collectively-owned dairy farms.

Equally striking was the preparation of Soviet youth for wartime effort by their peacetime training. The trade schools, mentioned by Voznesensky, bore good fruit. In the two years between October, 1940, and October, 1942, over one million young workers passed out of these schools and took jobs in the gun and tank works, aircraft factories, iron and steel foundries, etc. The trade schools themselves began to turn out arms and ammunition in the course of their studies. It proved possible to put hundreds of thousands of Soviet youth—boys and girls from fifteen or sixteen upwards—on to war work.

. . . . .

The fraternal relations between the Soviet peoples, described in the pages that follow, played a tremendous part in defeating Hitler's plans. Contrary to Nazi expectations, the severe blows inflicted on the Red Army during the first months of the war did not weaken the ties between the Russians, the Ukrainians, the Caucasian peoples and the Central Asiatic Republics. No separatist nor isolationist movements developed in those Soviet States which

were remote from the front. On the contrary, the war provided perhaps the most magnificent examples of their solidarity with the people of Russia, Byelorussia and the Ukraine, who bore the main brunt. It is of political, not purely economic, significance that the Habarovsk and Maritime regions, in the Soviet Far East, over-fulfilled their winter sowing plan in 1942 by 40 per cent, the Chita region by 30 per cent, while the other Siberian and Central Asian regions also over-fulfilled their agricultural plans.

Kirgizia, again, was able to boast, on February 1, 1943, when it celebrated its seventeenth anniversary as a constituent Soviet Socialist Republic of the Union, that it had been working for the front since the beginning of the war and that it had been one of the country's biggest arsenals, while tens of thousands of its sons were fighting at the front side by side with Russians, Ukrainians and Belorussians. It would be absurd not to see the connection between this fact and the change which has taken place, in this former colony of Tsarist Russia, during the last twenty-five years. In 1913 it was a nomad country, with 15 per cent of its population literate and, in all, 55 very primitive handicraft workshops, representing the sum-total of its industrial development. By 1939 it had several thousand industrial establishments, hundreds of them large factories, with a highly-mechanized coal industry, several scores of power stations, and thousands of tractors at work on its fields. Its literate population had increased to 70 per cent. The number of students in its colleges and universities had increased forty-five times, and the number of teachers fifty-four times, in a quarter of a century. Is it surprising that the former Kirgizian nomad should in 1943 feel himself a citizen of the Soviet Union no less than the Russian, with as great a stake in the country and in its liberties?

In culture and social welfare, also, the very difficult conditions of wartime did not bring a complete change in the Soviet way of life. The great foundations laid in the years of peace were not obliterated by the terrible

sacrifices of the war against Hitler barbarism. A few examples taken at random from the Soviet press will be sufficient to illustrate this.

The State Publishing House was able to report that in 1942 it had issued fiction translated into Georgian from ten different languages of the Soviet Union, into Belorussian, Uzbek and Tadjik from nine languages. It had issued translations from Kazakh into the Yakut language, for the people of the far north-east, and from Kalmuk and Uzbek into Buryat. Pushkin had been published in the languages of two small peoples—the Avars and the Chukots (dwellers in the Arctic north)—for the first time in 1942. The writings of the great Ukrainian poet, Shevchenko, had been published for the first time in Tadjik, as well as in the languages of the small Ingush and Mordovian peoples.

After a year's work, the world-famous Moscow Art Theatre opened its winter season in 1942 with Sheridan's *School for Scandal*. In the course of the year it had played *Twelfth Night*, *Julius Caesar* and *Othello*. *Hamlet* is in production.

On the anniversary of the death of Sir Isaac Newton, the People's Commissariat for Education of the R.S.F.S.R. instituted fifteen Newton scholarships in physics, mathematics, mechanics and astronomy.

The role of Soviet science in increasing the fighting capacity of the Soviet Union can scarcely be exaggerated. An article by Professor Yoffe has revealed that the Academy of Sciences in 1942 supplied the Red Army with over fifty inventions of first-class importance, including new methods of protection from machine gun and artillery fire, anti-submarine devices, etc.

Numerous study groups and expeditions organized by the Academy of Sciences discovered new strategical raw materials in the areas where evacuated factories had been set up, opened up new deposits of important minerals like coal, manganese and bauxite, produced new methods of creating synthetic rubber, improved crops; and solved important problems connected with high-speed aircraft.

Even the Institute of Mathematics, usually engaged in what appears to be abstract theory, was able to carry out an important series of studies in the theory of probability bearing on the problem of the dispersion of artillery fire, with great profit to the Red Army.

To take quite a different sphere, annual cross-country skiing contests organized all over the country by the trade unions, through their Committee for Physical Culture, expanded very greatly in importance during the war. In 1940-1, stimulated by the experience of the Finnish War, 1,381,000 took part in these contests. In the winter of 1942-3 there were 5½ million participants.

. . . . .

Sufficient has been said in the course of preceding pages to show that all this war effort was the conscious and deliberate work of intelligent men and women full of initiative and determination, who felt themselves free and knew that they must fight to keep their freedom. This is what the reader would expect from the way in which the Soviet people lived and worked in the years of peace. If the point is stressed here, it is because some super-"intellectual" critics, a few of them visitors to the U.S.S.R. in the years of war, could not rest content with their forced tributes to Soviet achievements in wartime. They could not admit that their many years' talk of "tyranny" in the U.S.S.R., the alleged lack of freedom of the Soviet citizen, the alleged lack of individual initiative, had been baseless chatter. Some of them have insisted on whispering tittle-tattle about Soviet achievements being due to "dictatorship," fear of the "secret police," etc.

The great achievements of the Soviet citizenry in wartime, no less than those of peacetime, would have been impossible if this slanderous gossip were true. The great movement of Socialist emulation itself is alone sufficient to show that the gossip is false. It is worth, however, mentioning the role of the two main pillars of Soviet society—the local soviets and the trade unions.

On the local soviets fell the responsibility of organizing

local defence activities of all kinds, from fortifications to universal military training. It was their job to help industry, transport and agriculture to fulfil their plans and overcome their innumerable difficulties—a job in which the municipal authorities had to enlist the widest support of the local population. The local soviets had the task of mobilizing local resources to meet the needs of the front, supplementary to the supplies that came from the state. Finally, it is the local soviets who organized aid to the Red soldiers' families, to the wounded and the evacuees—canteens, nurseries, clinics, housing, after-care, training and provision of work, finding voluntary labour to help out the soldier's wife on the land, etc. To think that all this could be organized under a system of police terror is to descend to the level of Goebbels' propagandists.

So also with the trade unions, which numbered more than twenty-five million members on the eve of the war. All the problems of leading Socialist emulation and ensuring the best possible working and living conditions of their members and their families, which existed in peacetime, were accentuated in war conditions. But the Soviet trade unions had two new jobs of particular importance placed on their shoulders after June, 1941. They were given the task of supervising the entire trading network of the country, in the interests of the consumer. Hundreds of thousands of controllers were elected by trade unionists at their places of work for this purpose—to supervise the correct weighing and pricing of goods in the state, municipal and co-operative stores, to supervise the quality of the food, the menus, the services in public restaurants and canteens, and to watch over cleanliness in all such establishments. Secondly, the trade unions' voluntary effort was mobilized to supervise the work of the state and municipal organizations caring for the families of the Red Army. The latter are relieved of taxation and any charges for education, and have priority food rights. The factory committees and trade union organizations see to it that these rights are effectively enjoyed. They help Red Army soldiers' dependants to

get suitable work, arrange for them to be taught a new trade or profession, make sure that the Red soldier's children get admission to the crèches and kindergartens, organize volunteers to work the family allotments for the Red soldier's dependants, etc. Innumerable as were the contingents of active trade unionists in peacetime, their number have been increased in wartime.

Soviet democracy—the democracy in which the citizen not only elects public functionaries, but more and more carries out public functions himself—lives and makes itself felt in the hard conditions of the war: indeed, it is the background of the Red Army's victories.

Many chances of avoiding an international disaster and of building a happier world were lost before 1939 because the facts about the Soviet Union, about the way of life of the Soviet peoples, were ignored or concealed. In the course of the war the results of that way of life, in all their grandeur, have been thrust inexorably upon the attentions of tens of millions of people, the world over, by the course of events. There is an organic and unbreakable connection between the achievements of the Soviet people on the battlefield and their efforts and successes in the years before. It is to be hoped, in the interests of humanity and for the sake of the better world which must be built when Fascism is crushed, that the information contained in this book will be circulated as widely as possible, and will teach its permanent lessons.

ANDREW ROTHSTEIN.

*March 30, 1943.*

# REPORT DELIVERED AT THE EIGHTEENTH ALL-UNION CONFERENCE OF THE C.P.S.U.(B.)

FEBRUARY 18, 1941

*By N. Voznesensky*

## I. RESULTS OF 1940

THE year 1940 was marked by a new Socialist advancement and the further progress of the Soviet Union. Neither economic crisis in the capitalist countries nor war has been able to halt, or could have halted, the development of our national economy.

The Soviet economic system is not liable to the influence of the fevers which are constantly attacking capitalist economy, especially under the blows of crises and wars. Nevertheless, we too have something to learn from the lessons of the present war.

Modern war, regarded from the technical and economic standpoint, is a war of engines: engines in the air and engines on land. The relative strength of the belligerent groups is to a large extent determined by the production of engines. Engines require a high level of technique and large quantities of oil and non-ferrous metals. The entire industry of the capitalist countries, including that of the United States of America, is being reconstructed along these lines.

Modern war is also to a large extent a war of reserves. The protracted nature of the war, its destructive character, and the breakdown of the bourgeois international system of division of labour all demand the accumulation by the belligerent countries of huge raw material, fuel, metal and production reserves.

The Soviet Union cannot close its eyes to these technical, economic and other features of modern warfare, and it is taking measures to equip its national economy with up-to-date technique and generally to ~~keep the country in~~ a proper stage of preparedness.



I shall cite the most general indices showing the growth of production in the Union of Soviet Socialist Republics and in the United States of America during the past few years. If we take the level of 1929 as 100, output in 1940 was as follows:

United States of America . . . . .	111
Union of Soviet Socialist Republics . . . . .	534

In 1940, even with the military mobilization of industry, the United States of America, according to the latest figures, increased its output compared with 1929 only by 11 per cent. But in the same period the Soviet Union increased the output of Socialist industry by 430 per cent.

Such are the laws of capitalist and Socialist reproduction. At the same time, economically—that is, in respect to output per head of population—we, as you know, are still behind the United States of America—our output of steel, coal and electricity being one-third or one-fourth of the latter's. We have still to make good this discrepancy, or, in other words, to solve the principal economic task of the U.S.S.R.

*The national economy of the U.S.S.R. is developing systematically in accordance with the laws of extended Socialist reproduction, which implies, first and foremost, a steady growth of production in all branches of the national economy.*

In the first three years of the Third Five-Year Plan, the industrial output of the U.S.S.R. increased from 95,500 million rubles in 1937 to 137,500 million rubles in 1940, or by 44 per cent. This includes an increase in the output of the machine-building and metal-working industry by 76 per cent.

In respect to the output of the defence industry, the government was guided by a simple truth—namely, if you want to be prepared for any “surprises,” if you do not want our people to be caught unawares, keep your powder dry and do not stint means on the production of aircraft, tanks, armaments, warships and shells.

The output of means of production in industry in 1940 increased by 13·8 per cent as compared with 1939, and

by 52 per cent as compared with 1937. The output of articles of consumption increased in 1940 by 7 per cent as compared with 1939, and by 33 per cent as compared with 1937. The increase of production in the Soviet Union was accompanied by a reconstruction of industry, especially of the machine-building industry, for the purpose of producing the most advanced and up-to-date equipment needed by the national economy and for the defence of the country.

Nevertheless, the provisions of the Third Five-Year Plan as regards rate of increase of industrial output were somewhat under-fulfilled. Instead of 14 per cent, as stipulated by the Five-Year Plan, the actual average annual rate of increase of output in the past three years was about 13 per cent. This under-fulfilment of the plan as regards rate of increase of production was chiefly due to the fact that the iron and steel industry at the beginning of the Third Five-Year Plan period lagged behind the established plan.

Railway freight carriage increased from 392,000 million ton-kilometres in 1939 to 409,000 million ton-kilometres in 1940. River-borne freight increased from 34,600 million ton-kilometres in 1939 to 36,000 million ton-kilometres. However, there are grave defects in the work of the railways: we still have irrational carriage of freight, which places an unnecessary burden on the railways, while the restricted traffic capacity of a number of sections and lines has not been eliminated.

There has been an increase in the gross harvest of grain, sugar beet, sunflower seed, potatoes and vegetables. The grain crop of the U.S.S.R. in 1940 amounted to about 7,300 million poods.

In 1940 the increase in livestock in the collective farms was: large horned cattle by 12 per cent, hogs by 15 per cent, sheep by 25 per cent, and goats by 34 per cent. Socialized collective farm animal husbandry is confidently increasing its share in the total head of livestock of the country.

*Extended Socialist reproduction further implies a steady*

*increase in Socialist accumulation*, which is above all apparent in the level of capital investment.

Total capital investments in the national economy of the U.S.S.R. amounted in 1940 to nearly 38,000 million rubles (including about 6,000 million rubles of decentralized capital investment).

During the first three years of the Third Five-Year Plan, the volume of capital investments in the national economy of the U.S.S.R. totalled 108,000 million rubles (including 17,500 million rubles of decentralized capital investment).

During the first three years of the Third Five-Year Plan state industry (not including district industry of a local character) was reinforced by the putting into operation of about 2,900 new mills, factories, mines, power stations and other plants. Let me remind you that throughout the whole period of the First Five-Year Plan a total of 1,500 new industrial plants were put into operation in the U.S.S.R.

The effect of the new plant put into operation in the first three years of the Third Five-Year Plan has been to increase the capacity of the coal mines by 51 million tons, the capacity of the power stations by approximately 2,400,000 kilowatts, the capacity of the blast furnaces by 2,900,000 tons of pig iron, and the capacity of the cotton textile mills by about 1,000,000 spindles, besides other production capacities.

However, the plan of capital development and of putting new plants into operation has not been quite fulfilled.

*Extended Socialist reproduction in the U.S.S.R. further implies a steady rise in the material standard of the working people, an increase in their consumption.*

The absolute increase of the national income in the first three years of the Third Five-Year Plan, calculated at fixed prices, amounted to 29,500 million rubles, the rise being from 96,000 million rubles in 1937 to 125,500 million rubles in 1940.

The aggregate pay-roll in the national economy of the

U.S.S.R. increased, in the branches of industry envisaged in the Third Five-Year Plan, from 82,200 million rubles in 1937 to 123,700 million rubles in 1940, or by 50 per cent.

The monetary incomes of the collective farms increased from 14,200 million rubles in 1937 to 18,300 million rubles in 1939. Preliminary data for 1940 indicate a further considerable increase in the incomes of the collective farms, in money and in kind, as compared with 1939.

State and co-operative retail trade increased from 126,000 million rubles in 1937 to 174,500 million rubles in 1940.

Thus, in spite of the hostilities on the frontiers of the Soviet Union in 1939 and the beginning of 1940, the national economy of the U.S.S.R. has in the past year made a big stride towards the fulfilment of the Third Five-Year Plan, confidently gaining momentum from month to month.

Of the results for 1940, special mention should be made of the beginnings of a considerable increase in the smelting of metal and the extraction of fuel.

Towards the end of 1940 the average daily output of pig iron had increased to 46-47,000 tons, as against 40,000 tons at the end of 1937.

The daily output of steel increased to 58-59,000 tons, as against 50-51,000 tons at the end of 1937.

The daily output of coal in the mines of the People's Commissariat of the Coal Industry had increased by the end of 1940 to 467,000 tons, as against 370,000 at the end of 1937.

The average daily output of oil and oil-gas at the end of 1940 had risen to 97-98,000 tons, as against 84-86,000 tons at the end of 1937.

In spite of these increases, the progress that has begun in the metallurgical and fuel industries cannot be regarded as adequate. The increase in the output of metal falls short of the provisions of the Third Five-Year Plan and is still not sufficient to cover the growing requirements of

the national economy of the U.S.S.R. The oil industry likewise continues to lag behind the provisions of the Third Five-Year Plan.

Of the results for 1940, mention should also be made of the improvement in labour discipline and the increase in working time spent by workers and office employees in production. The improvement in the activities of industry and the transport services in the latter half of 1940 was in a large measure due to improved labour discipline and increased working hours. This was most of all to be observed in such branches of the extracting industry as ore-mining and coal-mining, which, in their turn, provided a production base for the advancement of metallurgy and other branches of the national economy.

However, by no means all the plants and People's Commissariats made full use of the potentialities for increased production created by the Ukase of the Presidium of the Supreme Soviet of the U.S.S.R. of June 26, 1940. The People's Commissariat of the Timber Industry and the People's Commissariat of the Building Materials Industry rank first among the People's Commissariats in this respect. Although the plants of these industrial Commissariats somewhat improved their activities in the latter half of the year, nevertheless their plans for 1940 were considerably under-fulfilled. The People's Commissars of the Timber and the Building Materials Industries must draw a serious lesson from this fact.

In 1940 conditions were created for an acceleration of the rate of development of industry and of the entire national economy of the U.S.S.R. as compared with the earlier years of the Third Five-Year Plan. Chief among these conditions are:

(a) The beginnings of an advance of the metallurgical and fuel industries, which creates a solid basis for the development of the entire national economy.

(b) The increase in working time by about 15 per cent as compared with the earlier years of the Third Five-Year Plan and a decided improvement in labour discipline.

The most vital and decisive condition for further pro-

gress is that the attention of the Party organizations be turned to the necessity of displaying the maximum concern for the needs and interests of industry and transport.

Such are the principal economic results of the year 1940.

## II. ECONOMIC PLAN FOR 1941

The tasks of the national-economic plan for 1941 follow from the decisions of the Eighteenth Congress of the C.P.S.U.(B.) on the Third Five-Year Plan of National-Economic Development. The state plan for 1941 adopted by the Central Committee of the C.P.S.U.(B.) and the Council of People's Commissars of the U.S.S.R. proceeds from the following tasks:

*Firstly, to consolidate our economic independence in relation to the capitalist world; we must not be dependent on the capitalist economy, especially as regards metallurgy and machine building.*

Ensuring the Soviet Union's economic independence in relation to the capitalist world is one of the forms of our struggle against capitalism. The war, by closing the markets in the majority of the capitalist countries, has only served to lay added stress on this task. In the plan for 1941 it is met by accelerating the increase of production of special types of machines and of rare metals, as well as by the programme for the erection of new plants, especially in the sphere of machine building and metallurgy.

*Secondly, the plan for 1941 proceeds from the task of developing Socialist production to the utmost in all branches of the national economy, which implies a further step towards the completion of the construction of classless, Socialist society in the U.S.S.R.*

In the plan for 1941, this task is met by the rapid rate of development of Socialist industry, especially in its leading branches, as well as of transport and agriculture.

*Thirdly, the plan for 1941 proceeds from the task of not allowing any disproportion between the various branches of the national economy, and of making good any discrepancies that may arise by increasing the state reserves and creating new reserves.*

As you know, the proportion between the various branches of the national economy of the U.S.S.R. changes in accordance with the tasks which the Party and Government lay upon the national economy. As far as the plan for 1941 is concerned, the task of not allowing any disproportion between the various branches of the national economy implies increasing the rate of development of metallurgy and machine building, and hence of the whole group of industries producing means of production. It is particularly necessary to further increase the output of iron, steel, non-ferrous metals, coal and oil, and to develop all branches of machine building to the utmost.

The state plan of national-economic development of the U.S.S.R. for 1941 adopted by the Central Committee of the C.P.S.U.(B.) and the Council of People's Commissars of the U.S.S.R. envisages the following principal economic tasks:

To increase the gross output of the industries of the U.S.S.R. to 162,000 million rubles, representing an increase of 17 or 18 per cent as compared with 1940.

To increase the output of pig iron to 18,000,000 tons, of steel to 22,400,000 tons, and of rolled steel to 15,800,000 tons.

To raise the putput of coal to 191,000,000 tons, of oil and gas to 38,000,000 tons, and of peat to 39,000,000 tons.

To raise the putput of the machine-building industry by 26 per cent as compared with 1940.

To increase the capacity of the power stations by 1,750,000 kilowatts.

To increase the capacity of the cotton textile industry by 850,000 spindles.

To increase the gross grain crop by 8 per cent.

To ensure the average daily loading of 103,000 cars on the railways.

To increase the turnover of state and co-operative retail trade to 197,000 million rubles.

To increase productivity of labour in industry and building construction by 12 per cent.

To lower production costs in industry by 3.7 per cent

and thus ensure an additional accumulation in industry amounting to 7,300 million rubles.

To fulfil the programme of capital investment amounting to 57,000 million rubles (including 9,000 million rubles of decentralized capital investment).

To secure a further increase in the state material and financial reserves.

Such are the principal items of the state plan for 1941.

As regards the various branches of the national economy, the provisions of the plan are as follows:

### *Industry*

The proposed increase in output of means of production and articles of consumption by the industries of the U.S.S.R. will be seen from the following figures:

	1940	1941 (plan)	Increase Per cent
	Millions of rubles		
Production of means of production .	83,900	103,600	23.5
Production of articles of consumption	53,600	58,400	9.0

You will thus see that the increase in the output of articles of consumption will be accompanied by an even more rapid increase in the output of means of production.

This more rapid increase in means of production is indicative of the progressive character of Socialist society, which is furthering its productive forces.

The increase in various items of production in 1941, taking the level of 1940 as 100, is as follows:

Coal . . . . .	116	Locomotives . . . . .	142
Oil . . . . .	111	Freight cars . . . . .	194
Electricity . . . . .	114	Machine-tools . . . . .	128
Iron . . . . .	121	Cement . . . . .	138
Steel . . . . .	122	Timber . . . . .	136
High quality rolled steels .	123	Paper . . . . .	124
Aluminium . . . . .	166	Cotton fabrics . . . . .	111
Copper . . . . .	131	Leather footwear . . . . .	111
Nickel . . . . .	199	Refined sugar . . . . .	127
Molybdenum . . . . .	428	Canned goods . . . . .	124



In accordance with the Ukase of the Presidium of the Supreme Soviet of the U.S.S.R. of July 10, 1940, the plan for 1941 demands a decided improvement in the quality of goods produced. All branches of industry are confronted with new tasks with regard to quality, such as the output of more efficient machinery, of various high-grade metals, and of new, up-to-date equipment.

The iron and steel industry is to increase the output of special alloy steels as compared with 1940 by 100 per cent, of special sheet steel by 85 per cent, and of high-speed tool steel by 125 per cent.

The non-ferrous metals industry must ensure the output of high quality non-ferrous and rare metals in no way inferior in standard to those of the technically advanced capitalist countries.

I have to mention this because the People's Commissariat of the Non-Ferrous Metals Industry has not yet drawn all the lessons it should from the decision of the Central Committee of the C.P.S.U.(B.) regarding the quality of output of the plants of that Commissariat.

The machine-building industry has to ensure the mass output of new kinds of equipment, highly efficient machine tools and presses. In particular, the output of automatic and semi-automatic machine tools is to increase by 76 per cent.

The industry of the U.S.S.R. has every opportunity of not only fulfilling, but even of over-fulfilling the plan for 1941. The level of production attained in the fourth quarter of 1940 has created a solid basis for the fulfilment and over-fulfilment of the 1941 programme. As an example, I will cite the programmes for the output of pig iron and of freight cars.

In the fourth quarter of 1940 the average daily output of pig iron had already reached to almost 95 per cent of the average daily output provided in the plan for 1941. Hence, in order to fulfil the yearly plan, all the metallurgists have to do is to increase output by about 6 per cent as compared with the level of the fourth quarter of 1940.

It is obvious that this plan can not only be fulfilled, but over-fulfilled.

Or take the production of freight cars. The actual average daily output of cars in the fourth quarter of 1940 already amounted to 90 per cent of the average daily output planned for 1941. Consequently, all the car builders have to do in order to fulfil the plan for 1941 is to increase output by about 12 per cent as compared with the fourth quarter of 1940. It is obvious that this plan too can not only be fulfilled, but over-fulfilled.

All that is necessary is to mobilize the unutilized potentialities and reserves of our industry.

*One of these potentialities and reserves is the full utilization of existing machinery.*

The results of the census of machine-tools and presses, to which Comrade Malenkov has already referred, testify to an enormous growth in the number of metal-cutting machines, forging machines and presses in the industry of the U.S.S.R., and to the immense potentialities of our machine-building industry.

Censuses of metal-working machinery were taken in 1932 and in 1940. During this interval the total number of metal-cutting machines in the industry of the U.S.S.R. had increased by 250 per cent and of forging machines and presses by 200 per cent. This increase is significant of the immense advance in the development of industry, and especially of the machine-building industry, during the Second and Third Five-Year Plan periods of Socialist construction.

However, these results of the census also show that our metal-cutting machine-tools, forging machines and presses are being utilized altogether unsatisfactorily. The census disclosed that on November 1, 1940, there were about 46,000 machine-tools and 8,000 forging machines and presses at our plants, both operating and under construction, which had not yet been installed.

Furthermore, on the day of the census, November 1, 1940, 70,000 machine-tools and 15,000 forging machines and presses were standing idle. They were standing idle

either because of repairs or for various causes connected with the general working of the plants: untimely delivery of tools, fixtures and stock, or shortage of workers.

If from the total number of uninstalled and idle metal-cutting machines we exclude those that were in process of installation or under repair, as well as those which the plants considered unfit for use, even so we get over 30,000 that were not installed, and, of those that were installed, 38,000 that were standing idle, or a total of 68,000. The value of this reserve of the Soviet machine-building industry may be seen from the fact that in 1929, its best year, the United States of America turned out about 65,000 machine-tools.

*Another potentiality and reserve for the development of industry is the improvement of production technique, the use of perfected machinery and the introduction of more advanced technological methods. Allow me to cite a few examples in illustration.*

First example: automatization of the technological process in foundry work. The essence of the process is as follows. Castings are usually made in earthen moulds. But when the process is automatized, as has been done at the Klimovsk Machine-Building Works, for example, earthen moulds are not used. Instead, the metal is poured into permanent metal moulds installed on a special casting machine of a revolving type, consisting of twelve sections. This machine makes it possible to maintain continuous casting and to turn out 10,000 castings in a two-shift day, or 3,000,000 castings a year.

Continuous casting in permanent moulds on a machine of the revolving type, combined with the mechanization of other operations and the employment of highly efficient automatic equipment for the machining of parts after casting, makes it possible to reduce foundry space to one-sixth, the number of average-skilled workers by over 60 per cent, the amount of spoilage in casting by 50 per cent, the number of metal-cutting and auxiliary machines by 75 per cent, and the cost of production by 50 per cent, and

at the same time to secure an iron casting very little inferior to Bessemer steel.

This method of casting in permanent moulds should be widely adopted in the machine-building industry. Automatization of production will make it possible greatly to increase the capacity of existing foundries and to lower production costs.

Second example: stamping instead of forging of parts. The essence of the process is as follows. In forging, the part is held between the two flat jaws of the power hammer or press, and, by a series of successive blows manipulated by the smith, is hammered into a rough form, which requires a considerable amount of subsequent machining. In stamping, the heated metal is forced by a series of powerful blows of the hammer or press into the cavities of a die, only a slight amount of subsequent trimming being necessary. The effect is to decrease the margin of metal allowed for machining; in many cases a perfectly smooth surface is obtained, and the time spent on machining and the expenditure of metal are reduced. Let me cite as an instance the production of part No. 24 at the Molotov Machine-Building Works.

	<i>Forging</i>	<i>Stamping</i>
Production time (minutes) . . . . .	100	7
Percentage of turnings and waste to net weight of part . . . . .	120-130	40-50

It should be mentioned that stamping, of course, requires more powerful and precise machinery and entails the making of dies. Stamping may be employed in all mass production or serial production machine-building plants.

Third example: automatic welding with bare electrodes by the method developed by the Electro-Welding Institute of the Ukrainian Academy of Sciences. The essence of this method is as follows. The welding is done with a bare electrode, the part being covered by a thick layer of flux. This protective layer concentrates the heat and the metal melts more quickly. Protected by the layer

of flux, the molten metal, and consequently the welded seam, contains no pernicious admixtures and acquires higher mechanical qualities. The more rapid process of heating the metal, the automatic application of flux and electrode, and the automatic transplacement of the welding machinery effect a considerable saving of time and labour. Productivity of labour increases as much as five- to ten-fold, and the expenditure of labour and material is reduced.

The wide adoption of this method of automatic welding is quite feasible, and in fact essential, at many of our machine-building works, in the shipyards, and on construction jobs.

Fourth example: machine-tools with automatic measuring appliances. The essence of this system is as follows. The common method of measuring a part in process of machining does not ensure the necessary precision and reduces the efficiency of the machine, since, to be measured, the part has to be removed and the machine stopped for the purpose, entailing a loss of time. By the method of automatic measurement, an appliance is attached to the automatic machine-tool which makes it possible, without the intervention of the worker, and without stopping the machine or removing the part, automatically to check its quality and readiness. Automatic measurement ensures accuracy of work and considerably reduces spoilage; it curtails the time the machine is idle by 20 or 30 per cent, and enables one worker to operate three or four machine-tools instead of one. Although automatic measurement may be applied in a very wide field, it is still being used all too little at our plants.

Thus, you see, the use of up-to-date machinery and technological methods creates vast additional potentialities for the growth of our industry.

*A third potentiality and reserve for the further growth of production lies in reducing production costs and cutting down the numerous overhead expenses.*

The profits of Socialist industry are increasing from year to year. The net profit of the plants of the industrial

People's Commissariats of the U.S.S.R. amounted to 5,200 million rubles in 1938, and 8,500 million rubles in 1939, and rose to nearly 14,000 million rubles in 1940. As you know, the capitalist law of profits does not hold sway in Soviet industry. The policy of the Party with regard to the development of the various branches of industry is guided by the interests of the victory of Socialism and the preservation of the Soviet Union's independence in relation to the capitalist world, and not by the amount of profit. If this had not been so, it would not have been heavy industry, but the flour-milling and distilling industries, that would have developed fastest of all, since they are the more profitable.

Nevertheless, the elimination of loss in industry and the lowering of cost of production is a task of prime importance, for it puts the plants on a sound basis, increases their working capital, and helps to accelerate production. It therefore cannot be regarded as normal that certain important branches of industry are still running at a loss, as, for instance, the timber industry in 1940, where a loss of 11 or 12 rubles was incurred on every cubic metre of timber, and in the shale industry, where in 1940 a loss of 33 rubles was incurred on every ton of shale quarried.

Opportunities of reducing overhead charges and production costs are literally to be found on every hand. Take spoilage. A number of plants are obviously failing to cope with the task of turning out good quality product. Losses due to spoilage at the plants of the machine-building People's Commissariats and of the People's Commissariat of the Iron and Steel Industry amounted in 1940 to about 2,000 million rubles. If this spoilage were reduced by half it would mean a net additional increase of output to a value of 1,000 million rubles.

One fertile means of lowering production costs is to reduce overhead expenses. These expenses are far too high. There are too many office employees at the plants compared with the number of workers.

In the plants of the Union and Republican People's

Commissariats there were 75 office employees to every 1,000 workers in 1937, 90 in 1939, and 87 in 1940. As you see, in 1940 the proportion of office employees to workers dropped a little, but it was still considerably higher than in 1937. The proportion of office employees can and must be reduced at least to the level of 1937, which, in fact, is provided for in the plan for 1941. This will furnish an additional labour reserve for production and reduce unproductive charges.

In order to be able to utilize all these and other potentialities for the growth of our industry, we must develop the system of giving material inducements to workers to fulfil the plan well and economically, and must therefore thoroughly eradicate equalitarianism, and unfairness in the payment of labour at the plants.

Unfairness and equalitarianism still persist in industry as between auxiliary workers and basic productive workers; as a rule, the auxiliary workers have lighter standards of output; what is more, insufficient supervision is exercised to see that these standards are observed.

Unfairness also exists with regard to the payment of the labour of business executives and engineering and technical personnel at the plants: executives who get their plans fulfilled, and pseudo-executives who do not, are remunerated equally. If this unfairness is eliminated and a proper system of material inducement adopted, new potentialities for the growth of our industry will be created.

Such are the provisions of the plan for 1941 in the sphere of industry.

### *Agriculture*

The year 1940 was marked by the further consolidation of the collective farm system and the further progress of agriculture. Of the measures taken by the Party and the Government to consolidate the collective farm system in the past year, the most important are the following:

*Firstly, measures to protect the socialized land of the collective farms from being squandered. These measures nipped in the*

but the tendency to allow free scope to private property relations in our countryside, against which Comrade Stalin had warned the Party.

*Secondly, the adoption of the system of calculating the amount of produce from tillage and stockbreeding to be delivered to the state on the basis of the number of hectares of land in each collective farm.* This decision has given a spur to the initiative of collective farmers in developing 'socialized farming, especially socialized stockbreeding in the collective farms.

*Thirdly, the decision of the Central Committee of the C.P.S.U. (B.) and of the Council of People's Commissars of the U.S.S.R. relating to additional payment of the labour of collective farmers in the Ukrainian Republic for increased yields of agricultural and livestock produce.*

These decisions and measures are historical in the matter of developing and consolidating the victory of Socialism in the countryside. They are helping to further and strengthen Socialist agriculture. The role of planning in agriculture has also been enhanced. The indices of the plan of crop yield and livestock productivity now acquire greater validity in connection with the additional payment of the labour of collective farmers who exceed these indices. Thus planning in agriculture has acquired a tremendous additional force.

The increase of the area of the principal crops envisaged in 1941 is as follows:

	Millions of hectares	Per cent of 1940
Total crop area . . . . .	157.0	103.9
Including:		
Grain crops . . . . .	111.1	100.2
Industrial crops . . . . .	12.0	101.7
Vegetables, melons and potatoes . . . . .	11.4	112.9
Fodder crops . . . . .	22.5	124.3

These figures show:

(1) That the area of all crops is to increase on an average by nearly 4 per cent.

(2) That the increase in area is to be largest of all in the case of fodder and vegetable and melon crops,



(3) That the grain area is to remain almost the same as in 1940.

This change in the structure of the crop area is mainly connected with the adoption of a correct crop rotation system and with a considerable increase in the fodder area.

There is likewise a considerable increase in the *gross harvest* of grain and industrial crops. The gross harvest of grain in 1940 increased by 7.3 per cent, of sugar beet by 18.6 per cent, of sunflower seed by 13.2 per cent, and of potatoes by 35.6 per cent.

In spite of the unfavourable weather conditions of the year 1939-40 (unusually severe frosts, a protracted spring, and drought conditions in the East), the gross harvest of grain and industrial crops in 1940 greatly exceeded that of 1913, which was a favourable year for agriculture, and of succeeding years. The cotton and flax crops in 1940, although they considerably exceeded those of 1913 (cotton by 240 per cent and flax by 50 per cent), nevertheless fell short of the provisions of the plan, a fact to which the organs of the People's Commissariat of Agriculture and the local Party organizations should pay particular attention.

The 1941 plan provides for a further increase in the gross output of agriculture: grain, raw cotton, flax fibre, sugar beet, potatoes, etc. The gross grain harvest should increase in 1941 to about 7,900 million poods, chiefly on account of increased crop yield.

In this connection, it is highly important to note the increase of grain crops in the south-eastern and eastern regions of the U.S.S.R. In the Volga Region, a grain crop of 937 million poods was obtained in 1940, which exceeds the crop of 1913, considered to be the best harvest year Russia had known, by 32 per cent.

The share of the eastern regions in the total grain crop of the Soviet Union has increased considerably. In spite of drought conditions, the grain crop in these areas in 1940 amounted to 1,482 million poods, exceeding the level of 1913 by 88 per cent. Thus a reliable granary for

the peoples of the Soviet Union has been created in the south-eastern and eastern parts of our country.

The number of machines employed in agriculture in the Soviet Union has increased. In 1940 the number of tractors increased to 523,000, as compared with 483,000 in 1938, and the number of harvester combines to 182,000, as compared with 153,000 in 1938. This in addition to many other kinds of machines, simple and complex. With this machinery as a basis, the progress of Socialist agriculture has become stable.

Thanks to the measures taken by the Central Committee of the C.P.S.U.(B.) and the Council of People's Commissars of the U.S.S.R. to encourage socialized stock-breeding—the fixing of minimum number of cattle in the collective farms, and the adoption of a per hectare basis for the determination of meat deliveries to the state—the collective farms are able to register important successes in the organization of livestock departments, in the increase of stock and in higher productivity of animal husbandry.

During the first three years of the Third Five-Year Plan, the number of livestock departments in the collective farms increased as follows:

	<i>January 1, 1938</i>	<i>January 1, 1941</i>	<i>Increase per cent</i>
Total number of livestock departments . . . .	347,000	618,000	78
Including:			
Large horned cattle departments . . . .	132,000	234,000	77
Sheep departments . . . .	71,000	216,000	204
Pig departments . . . .	77,000	168,000	118

By the beginning of 1941, for every 100 collective farms, there was an average of 261 livestock departments, including 99 large horned cattle departments, 91 sheep departments and 71 pig departments.

The increase in total head of draught and produce animals in the collective farms during this period was as follows:

Large horned cattle increased to	20,000,000
Sheep and goats	„ „ 41,900,000
Pigs	„ „ 8,200,000
Horses	„ „ 14,400,000

The number of large horned cattle owned by the collective farms towards the end of 1940 was equal to the total in all Germany in 1938. And Germany is rightly regarded as a country in which stock breeding is highly developed.

In pursuance of the wishes of the collective farms, the 1941 plan provides for a further increase in collective farm livestock, viz. large horned cattle by 19 per cent—including cows by 24-5 per cent—sheep and goats by 23-4 per cent, pigs by 38 per cent, and horses by 9-10 per cent.

The achievements of the agriculture of the U.S.S.R. are considerable. However, they might be greater still if we drew upon our additional potentialities and eliminated shortcomings and the toleration of shortcomings on the part of the organs of the People's Commissariat of Agriculture and of the People's Commissariat of State Farms. The following, at least, must be regarded as shortcomings of this kind:

(1) Tractors and harvester combines standing idle even during the busiest periods of the agricultural year.

(2) Losses of grain and industrial crops, especially owing to delayed harvesting.

(3) Rather excessive losses in stock breeding, and non-fulfilment of the programme of stock productivity.

(4) The fact that a part of the collective farmers do not work the necessary minimum number of days, which has the effect of retaining hidden labour reserves in agriculture.

The adoption, following the example of the Ukraine, of the system of additional payment of the labour of collective farmers who secure more than the planned yields of agricultural crops and productivity of livestock will help still more to rally the collective farm peasantry in the

effort to achieve the further progress of Socialist agriculture.

Such are the principal provisions of the plan for 1941 in the sphere of agriculture.

### *Transport*

The increasing output of the national economy of the country from year to year makes growing demands on the rail and water transport services in respect to the carriage of vast quantities of freight. The transport services require increasing amounts of equipment. With the growing freight traffic of the country, there is a growing need to rationalize its organization.

The present war has revealed the tremendous importance of the transport services to the life of a country or people. No sea power, if it wishes to be independent, can dispense with a highly developed fleet and sea routes. But the U.S.S.R. is not only a sea power; it is—and this is more important—a big railway power. The importance of railways to the U.S.S.R. is just as great as the importance of a fleet is to a big sea power.

In the past few years the Central Committee of the C.P.S.U.(B.) and the Council of People's Commissars of the U.S.S.R. have shown special interest in the needs of the transport services, and have done everything for their improvement. The hostilities in which the Red Army was involved at the end of 1939 and in the beginning of 1940 showed that in spite of individual shortcomings, our railway system successfully coped, and will undoubtedly be able to cope again, with the mobilization requirements of our Red Army.

In 1941 freight carriage will increase as follows:

Rail freight to 431,000,000,000 ton-kilometres, or by 4 per cent  
River freight to 46,300,000,000 ton-kilometres, or by 28 per cent

As you see, the purpose of the 1941 plan is to achieve a much more rapid increase of river-freight traffic in order to relieve the railways and to provide water transportation

for the rapidly increasing volume of freight. Thanks to the construction and development of waterways—the Dnieper-Bug Canal, the Moscow-Volga Canal, and the reconstruction of the Mariinsk system—the river transport service has every opportunity of fulfilling this programme.

One important means by which freight traffic may be increased in the proportions and directions required by the national economy is to *put an end to irrational haulage—that is, to excessive long-distance hauls and cross-hauls*. A reduction of the time freight is in transit lowers the cost of production of goods and shortens the time required for their production, and, consequently, accelerates the rate of extended Socialist reproduction.

Yet cross-hauls and excessive long-distance hauls are still all too common. Although, in the aggregate, the length of haul in 1940 was somewhat less than in 1939, nevertheless the average length of haul of such mass goods as coal and timber increased in 1940, rather than decreased. Let me cite a few examples of irrational haulage that occurred in 1940.

Four hundred and seventy thousand tons of coal from the Kuznetsk Basin in Siberia were consigned to Central Asia, to the area of the Tashkent and Ashkhabad Railways. Yet the requirements of the Union Republics of Central Asia, including the requirements of the railways themselves, may be more than covered by extracting coal locally, where there are very large deposits.

Two and a half million tons of coal from the Kuznetsk Basin in Siberia were consigned in 1940 to the area of the Kuibyshev, Kazan and Gorky Railways, and even farther west, in spite of the fact that there are fairly considerable deposits of coal, shale and peat in the Urals and the Central Areas of the Soviet Union.

This irrational, or excessive, hauling of coal, the lion's share of which is consumed by the locomotive itself in the process, should be discontinued. What is needed for this is to increase the mining of coal in the central regions, in the Urals and in Central Asia. What is further needed is that the People's Commissariat of Railways and the State

Planning Commission institute real control over freight traffic.

Owing to the delay of the People's Commissariat of the Iron and Steel Industry in adopting measures to end the narrow specialization of rolling mills and to eliminate the shortcomings in the organization of metal supply, inter-district cross-hauling of metal still continues. In 1940, 12,500,000 tons of metal were consigned from, and 900,000 tons consigned to, districts in the Ukrainian Republic. Two million tons of metal were consigned from, and 1,400,000 tons consigned to, districts of the Urals. While 1,800,000 tons of metal were consigned from the central regions, 3,500,000 tons were consigned to them. Eight hundred thousand tons of metal were consigned from the north-western districts at the same time that 2,000,000 tons were consigned to them. Thus we have districts consigning large quantities of metal and at the same time bringing in large quantities from other districts in the reverse direction.

Owing to the failure of the People's Commissariat of the Iron and Steel Industry to carry out the decision of the Eighteenth Congress of the C.P.S.U.(B.) relative to the opening up of manganese mines in new districts for the needs of the Urals and Siberia, the latter continue to procure their manganese ore from far-off Transcaucasia and the Ukraine. In 1940, 185,000 tons were consigned from Chiaturi and Nikopol to the Urals, and 90,000 tons to districts in Siberia. Yet at the same time the rich manganese deposits in the Northern Urals and Bashkiria are still being inadequately worked by the People's Commissariat of the Iron and Steel Industry.

Hence the additional opportunities for improving the work of the railways by putting an end to irrational haulage are still far from being utilized. Yet if the average length of haul, and hence of car run, were reduced by even ten kilometres compared with 1940, it would enable the railways to increase their daily loadings by nearly 1,500 cars.

In 1941 the railways will be assigned 6,500 million

rubles by the state for capital investment, which exceeds the assignments made in 1940 by nearly 55 per cent. The number of new cars to be supplied to the railways in 1941 will be almost double that of the previous year.

The prime task that faces the railways is to see that their chief properties—permanent way and rolling stock—are in proper order and to enlarge the capacity of congested lines and sections which are reducing the efficiency of the entire railway system.

Apart from certain special lines and sections which it is incumbent on the People's Commissariat of Railways to expand in 1941, attention should also be paid to increasing the capacity of the Urals railways, which until now have not been fulfilling their programmes. This state of affairs should be ended for good, since the Urals railways are a highly important factor in the national economy of the Soviet Union.

Big potentialities lie in *speeding up the circulation of rolling stock*. The tremendous reserves at the disposal of the railways are shown by the following facts:

In 1940, of the average circulating time of a freight car—19 per cent was spent in actual movement, 11 per cent at intermediate stations, 21 per cent in loading and unloading, and 49 per cent in marshalling and other operations.

In 1940 the average circulating time of freight cars was reduced several hours as compared with 1939. However, the potentialities here are still very great. A reduction in the circulating time by 3 or 4 per cent as a result of curtailing time spent in loading and unloading and in marshalling and other operations, would enable the railways to increase car loadings by some 3,500 cars a day.

But the national economy possesses even greater potentialities for increasing freight carriage in the case of *water transport*. The U.S.S.R. is one of the richest countries in the world with regard to waterways.

Although water-borne freight showed an increase in 1940, it is still below what the plans call for, and is still not relieving the railways sufficiently. The position is

particularly unsatisfactory with regard to the river transportation of such freight as timber, building materials, coal and oil. Let me give a few examples.

One million five hundred thousand tons of timber are brought by rail to Leningrad and the Leningrad region every year. Yet the People's Commissariat of the River Fleet has every opportunity of organizing the shipment of this timber by water, via the White Sea-Baltic Canal and the Mariinsk system. This is demanded by the interests both of the national economy and of the railways.

In 1940, about 1,200,000 tons of timber were delivered by rail to stations of the Orjonikidze and Transcaucasian Railways. This freight might have been entirely entrusted to the water transport service. Yet the delivery of timber via the Volga and the Caspian to districts in the Orjonikidze Territory and Transcaucasia is organized very unsatisfactorily by the People's Commissariat of the River Fleet.

River transport is still being inadequately utilized to relieve the railways of oil freight. The plan for oil shipments was not fulfilled in 1940; and, in particular, it was not fulfilled in respect to oil shipped north from Astrakhan along the Volga. The People's Commissariat of the River Fleet will have to increase the carriage of oil by water considerably in 1941.

Data relating to the utilization of the river fleet testify to the existence of big unutilized potentialities for increasing water-borne traffic.

In 1940, owing to untimely completion of winter repairs of vessels, the People's Commissariat of the River Fleet failed to fulfil the programme with regard to towed traffic alone by nearly 1,300 million ton-kilometres; in particular, the huge Volga oil-carrying fleet fell 750 million ton-kilometres short of its plan.

In addition, owing to delays in summer repairs of vessels, the People's Commissariat of the River Fleet underfulfilled the 1940 plan for bulk freight by 700,000,000 ton-kilometres.

The urgent duty of the water transport service is to



reduce the idle time of river craft, which is still excessive, improve the quality of repairs of vessels, especially winter repairs, and effectively utilize our country's vast waterways. All the conditions are there for our water transport workers to fulfil and even over-fulfil the plan, the big plan, of increasing water-borne freight in 1941 by 28 per cent.

Such are the principal provisions of the plan of 1941 in the sphere of water transport.

### *Capital Development*

The plan of construction and geographical distribution of plants in 1941 adopted by the Central Committee of the C.P.S.U.(B.) and the Council of People's Commissars of the U.S.S.R. is an imposing one. It mobilizes the national economy of the U.S.S.R. for the accomplishment of new and great tasks in the construction of Socialism.

The programme of capital investment in the U.S.S.R. exceeds the investments in 1940 by over 50 per cent. This programme reflects the progressive advance of Socialist society. What is the reason for this substantial increase in capital investments? It is due to the urgent demands of our development and the expansion of Socialist industry, to the necessity of accelerating the accomplishment of the task of overtaking the principal capitalist countries economically.

Out of a total of 48,000 million rubles of centralized capital investments, industry accounts for 30,600 million rubles, or 71 per cent above the 1940 figure.

The biggest increases in capital investments are in the following branches of national economy:

	<i>Increase over 1940, per cent</i>
Iron and steel industry . . . . .	122
Non-ferrous metals industry . . . . .	93
Oil industry . . . . .	123
Power stations . . . . .	148
Machine-building industry . . . . .	102

In the structure of our capital investments the policy of our Party can be clearly perceived. This policy is designed

for the further advancement of Socialist industry, and, consequently, of the entire national economy of the U.S.S.R.

The plan for 1941 envisages substantial changes in the geographical distribution of the new plants. The volume of capital construction work in the Union Republics in 1941 as compared with 1940 will increase as follows:

In the R.S.F.S.R.<sup>1</sup> the increase amounts to 50 per cent. Specifically, the capital investments in the Urals and Western Siberia will increase by 58 per cent, in the South-East by 66 per cent, and in the North and North-West by 147 per cent. Here new and powerful industrial bases of the Soviet Union will be created. Now that the frontier of the Soviet Union in the vicinity of Leningrad has been rectified and the security of Leningrad greatly enhanced, the Central Committee of the Party and the Council of People's Commissars of the U.S.S.R. find it possible to invest considerable amounts of capital in the industry of Leningrad and the Leningrad region in 1941.

In the Ukrainian S.S.R. the capital investments in national economy in 1941 will increase by 76 per cent, the increase being mostly in the machine-building, metallurgical and chemical industries and in the transport services. Big capital investments will be made in the national economy of the Moldavian S.S.R., especially in its industry and transport services.

In the Byelorussian S.S.R., capital investments are to be increased by 45 per cent. The fastest development will be shown by the fuel and machine-building industries, power stations and transport.

The rate of increase of capital development in the Transcaucasian Union Republics will be higher than the average for the U.S.S.R. as a whole. Capital investment in the national economy of the Georgian S.S.R. will increase by 101 per cent, of the Armenian S.S.R. by 135 per cent, and of the Azerbaijan S.S.R. by 122 per cent. The biggest investments will go to the oil, machine-building, iron and steel and non-ferrous metals industries.

<sup>1</sup> Russian Socialist Federated Soviet Republic—Russian proper.

In the Union Republics of Central Asia, the biggest increases in capital investment will be in the oil, coal and non-ferrous metals industries and in irrigation works. Capital investments in the national economy of the Tadjik S.S.R. will increase by 83 per cent, of the Kazakh S.S.R. by 51 per cent, of the Kirghiz S.S.R. by 132 per cent, and of the Turkmen S.S.R. by 72 per cent. The largest assignments for capital investments will go to the national economy of the Uzbek S.S.R., where a local source of coal supply is being created and the construction of the Chirchik hydro-electric power station and nitrogen fertilizer plant is being continued.

In the Karelo-Finnish S.S.R. capital investments are to increase by 280 per cent. The quickest rate of development here will be shown by the iron and steel, the non-ferrous metals, and the timber, cellulose and paper industries, by power stations, and by the transport services.

The Lithuanian, Latvian and Estonian Soviet Socialist Republics will in 1941 be carrying out a programme of construction of Socialist enterprises for the first time. The machine-building, fuel, power and textile industries will be greatly developed. The proportion of Socialist industry in the national economy of the Baltic Republics will increase in full accord with the interests of the workers, peasants, and intellectuals of the new Socialist Soviet Republics.

The programme of increase of capital investments provided for in the 1941 plan lays serious obligations on the People's Commissariats and on the Party organizations in the localities. The assigned quotas of materials and machinery must be used to the full, local production of building materials must be expanded to the utmost, and contingents of building workers trained in good time.

The 1941 plan of capital construction for the country as a whole provides for construction work on 2,955 plants, of which 2,213 will be new construction jobs or plants already under construction, and 742 plants already in operation which are being expanded and reconstructed.

In view of this broad scale of construction of new plants, it is highly important to arrange for the proper economic co-operation of the future plants within each economic area. The industrial People's Commissariats should be reminded of this highly important task, for many of them are not showing proper concern for the supply of their future plants, even for such supplies as castings, parts and semi-manufactures. Anybody who reckons upon securing these elements of production from outside, all the more from other economic areas, may encounter very grave inconveniences when it comes to starting operations at the new plants. It is the Commissariats that must plan for the supply of their future plants and must arrange for it first and foremost within the economic area concerned.

The state plan provides for 1,576 industrial plants being put into operation in 1941 in full or in part; of these, 1,151 will be new plants and 425 reconstructed plants.

The new production capacities and plants to be constructed and put into operation in the various branches of industry under the state plan of 1941 are as follows:

Coal industry: pits with an aggregate capacity of 27,000,000 tons per year to be started, including 22,700,000 tons in the collieries of the People's Commissariat of the Coal Industry.

Oil industry: wells to an aggregate depth of 3,120,000 metres to be drilled; 1,938 newly-drilled wells and 1,590 formerly idle wells to start operating.

Power industry: installations with a total capacity of 1,750,000 kilowatts to be started, including 815,000 kilowatts at district power stations of the People's Commissariat of Power Stations.

Iron and steel industry: (a) new blast furnaces with a total annual capacity of 2,300,000 tons of pig iron, steel furnaces with a total capacity of 2,780,000 tons, new Bessemer converters, coking ovens, rolling mills, agglomeration plants, and iron mines to be started; (b) construction of the following new metallurgical plants to be expanded: a second metallurgical plant in Siberia, two plants in the Urals, and plants in Transcaucasia,

the Karelo-Finnish Republic and in the Vologda Region.

Machine-building: (a) construction of a heavy engineering plant in Siberia, a heavy crane plant in Siberia, a large forgings plant in the Ukraine, three forging machinery plants in the Ukraine, two in the Urals, and others in the Volga Region and Western Siberia; (b) construction of new machine-tool plants: heavy machine-tool plants in the Urals and Siberia, boring mill plant in Siberia, automatic and turret lathe plant in the Urals, grinding machine plant in the Voronezh Region, precision machine plant in the Penza Region, broaching machine plant, gear-cutting machine plant and large heavy duty lathe plant in the Volga Region, planing machine plant and automatic and semi-automatic machine plant in Siberia, lathe plant in the Ryazan Region, and multiple drilling machine plant in the Yaroslavl Region; (c) construction of the following electrical equipment plants: a transformer plant in the Urals, a low-voltage equipment plant in the Volga Region, an electric motor plant in Siberia, an electrical instrument plant in the Krasnodar Territory and a relay and automatic appliances plant in the Volga Region.

Textile industry: (a) installation of 850,000 cotton spindles; (b) construction of cotton textile mills in Stalinsk, Barnaul, Tashkent and Krasnoyarsk, a belting plant in Astrakhan, and a carding plant in Yaroslavl.

The fulfilment of this plan of capital construction calls for a decided improvement in the work of the People's Commissariat of the Building Industry and of the building organizations.

Great possibilities in fulfilling the plan of capital construction are opened up by express building methods. Let me cite as an example the construction of a new plant by the People's Commissariat of Armaments.

In December, 1940, this People's Commissariat was instructed by the Government to erect a new plant by April 1, 1941—that is, within a little more than three months. The plant was to have a floor space of 19,500

sq. metres, and to accommodate several thousand workers in each shift.

The People's Commissariat decided to employ light standard parts, in order to economize material as much as possible and have the plant ready for operation at the earliest date. The plans were drawn up and approved in ten days. All the preparatory work took another ten days, the steel structural parts being made on the building site by the builders themselves.

The weight of all materials used in the construction has been reduced to one-fifth; the amount of metal required is no more than that used in ordinary ferro-concrete construction. Thanks to the elimination of laborious processes and to maximum standardization, the number of workers is one-third of that usually employed on such jobs.

In December, 1940, there was no sign of any building operations. Now, in February, 1941, the walls of the plant have been erected, construction parts are being assembled, and the builders promise to have the plant ready by the end of March, 1941—that is, in the scheduled time.

This example shows that all our medium capacity plants may be built and started within a period of one year.

The plan of capital construction for 1941 proceeds on the assumption that builders and Party and business organizations will be able to do away with the bottlenecks in the organization of construction work. Comrade Stalin has told us time and again that plans must not be static—based, that is, only on resources already available. There is no worse sight than to see a so-called man of affairs limping after life, instead of organizing it and going ahead. Our plans must be dynamic, so that the people who fulfil them carry the work forward, overcoming difficulties and multiplying our potentialities.

Such are the tasks of the plan of 1941 in the sphere of capital development.

*Material and Cultural Standard of the Peoples of the U.S.S.R.*

I now pass to the material and cultural standard of the peoples of the U.S.S.R.

The systematic growth of the national income of our country, and hence of the social wealth and the personal consumption of the working people, is due to the fact that new contingents of workers, collective farmers and intellectuals are constantly being drawn into production, as well as to the increasing productivity of labour.

The size of the working class in the U.S.S.R. is growing from year to year. The number of workers and office employees engaged in the national economy increased to 30,400,000 in 1940, as compared with 27,000,000 in 1937. According to the plan for 1941, the number of workers and office employees is to increase to 31,600,000.

The continued development of industry demands the systematic replenishment of the working class with new skilled forces and a proper distribution of labour power among the various branches and regions such as the interests of the national economy warrant.

In 1940, on the initiative of Comrade Stalin, the Party and Government began to create state labour reserves by training skilled forces of young workers in trade schools and factory training schools.

In 1941 it is proposed to enrol an additional 350,000 new students in the trade and railway schools, and 537,000 in the factory training schools. Already in 1941 Socialist industry will be reinforced by 794,000 young skilled workers who have been through the factory training schools.

The steps taken by the Party and Government to create state labour reserves are of fundamental importance in determining the qualitative and quantitative composition of the working class, in further advancing our industry, and in placing the Socialist planning of the national economy on a firm footing.

Compared with the previous year, the aggregate payroll of workers and office employees in the national

economy of the U.S.S.R. will increase in 1941 by 14,000 million rubles, and will total upwards of 175,000 million rubles. This tremendous increase in the pay-roll of the workers and office employees is accompanied and made possible by an increase in labour productivity.

The plan for 1941 provides for a 12 per cent increase in productivity of labour and a 6.5 per cent increase in average wages per worker. This proportion between increase of labour productivity and average wages furnishes a basis for lowering production costs and increasing Socialist accumulation, and constitutes the most important condition for the realization of a high rate of Socialist reproduction.

The necessity of a higher increase in labour productivity as compared with increase in wages is perfectly obvious: in order to develop its productive forces the nation must produce more in any one year than it uses up in personal consumption.

The state and co-operative retail trade turnover in 1941 will approximate 197,000 million rubles, representing an increase of 22,500 million rubles over 1940. The increase of retail trade is based on an increased output of industrial goods and agricultural produce, and on the rising incomes of workers, collective farmers and intellectuals.

The decision of the Central Committee of the C.P.S.U.(B.) and the Council of People's Commissars of the U.S.S.R. on the measures to increase the production of consumers' goods and foodstuffs from local raw materials should be a spur to local initiative in enlarging industrial and food resources, and will serve as a new means of increasing trade in the country. It is one of the major tasks of the Party, Soviet and business organizations to develop trade to the utmost and to eradicate all manifestations of bureaucracy in the trading system.

The rising standard of living of the people of the U.S.S.R. is attended by a rise in the level of culture. State appropriations for social and cultural services, which amounted to 35,200 million rubles in 1938, increased to 41,700 million rubles, or by 18.5 per cent, in 1940. The



draft state budget for 1941 provides for an increase in expenditure on social and cultural services to 47,800 million rubles, 14.6 per cent more than in the previous year.

The cultural progress of the peoples of the Soviet Union is indicated by a further increase in the number of school pupils and university students. The total number of elementary and secondary schoolchildren in the school year 1941-2 will reach 36,200,000, or an increase of 3.4 per cent over 1940-1. The number of university students will reach 657,000, or an advance of almost 13 per cent.

The increase in the number of students in 1941 and the growth of the number of engineers and technicians in industry will mark a further step in the cultural and technical advancement of the peoples of the Soviet Union. The people, their culture and their productive skill, these are the decisive productive force in our society.

During the period of the Five-Year Plans the Soviet people have advanced immensely in culture and in the acquisition of technical skill. Very interesting in this respect are the figures of the last census in the U.S.S.R.

As you know, the census shows that between 1926 and 1939 the population of the Soviet Union increased by 16 per cent. But just see how fast the forces of skilled workers and intellectuals in the Soviet Union increased in the same period:

						<i>Increase</i>
(a) Workers:						
Mechanics	.	.	.	.	.	3.7 times
Turners	.	.	.	.	.	6.8 "
Millwrights	.	.	.	.	.	13.0 "
Locomotive drivers	.	.	.	.	.	4.4 "
Plasterers	.	.	.	.	.	7.0 "
Tractor drivers	.	.	.	.	.	215.0 "
(b) Intellectuals:						
Engineers	.	.	.	.	.	7.7 times
Agronomists	.	.	.	.	.	5.0 "
Scientists	.	.	.	.	.	7.1 "
Teachers	.	.	.	.	.	3.5 "
Physicians	.	.	.	.	.	2.3 "

Such are the chief indices of the rising material and cultural standard of the peoples of the U.S.S.R.

The achievements of the national economy of the U.S.S.R. in 1940 have been immense. The country owes these achievements to our heroic people, to our Communist, Bolshevik Party, and to the leader of peoples, Comrade Stalin.

But greater still are the tasks of development that confront us in 1941. The decisive condition for fulfilling the plan is control and verification of the way the adopted plan is carried out in every factory, in every collective farm, and by every Party organization. That is our most reliable guarantee against bureaucracy, a guarantee of our irresistible advance towards Communism.

The historic tasks of the year 1941 will be accomplished by the peoples of the Soviet Union, headed by our Party, by our Stalin.

# THE U.S.S.R. AS A WORLD ECONOMIC POWER

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A VAST territory, inexhaustible natural resources and a numerous and rapidly increasing population form the natural basis for the speedy progress of the Soviet Union.

The tsarist government proved unable to develop the productive forces of the country, and in spite of immense natural wealth, Russia remained an agricultural country with a backward industry. The people were poor and uneducated. Nearly three-quarters of the population were unable to read or write. It was only when civil war and foreign intervention had ended that the Soviet Union was in a position to begin utilizing the natural resources of the country. Eighteen years of peace have been enough for the attainment of immense economic progress.

The Soviet Union is the largest country in the world. It has an area of 8,220,000 square miles.<sup>1</sup> The United States (including Alaska and other possessions) has an area of 3,145,000 square miles; China 4,092,000 square miles; Brazil 3,282,000 square miles.

Except for some islands in the Arctic, this huge territory of the Soviet Union comprises one unbroken land mass. It stretches in a broad belt along the northern half of Europe and Asia from Finland in the West to the Japan Sea and the Pacific Ocean in the East. In the North-East, by way of the Bering Straits, the Soviet Union borders on Alaska. From North to South, the U.S.S.R. stretches from the North Pole deep into the heart of Asia.

<sup>1</sup> The figures given here for the area, and below for the population, of the Soviet Union refer to 1938, that is to say before the admission of the Baltic States and the incorporation of territory in Finland, Bessarabia and North Bukovina. Today the total area of the Soviet Union is 8,340,479 square miles, while the population is increased by over 20 million.

The Soviet Union has a population of 170,467,186, the third largest in the world, exceeded only by China and India. The growth of population is unusually rapid. Since 1920, the population of the U.S.S.R. has increased by 35,900,000 persons, and since the census of 1926 it has increased by 23,439,271 persons. Despite this rapid growth of population, there is no danger of so-called "over-population" in the U.S.S.R. There are no "surplus" or "redundant" workers, peasants or intellectuals. On the contrary, unemployment is entirely unknown in the country and there is a tremendous demand for people of every trade and profession in all branches of economic and cultural activity.

The natural resources of the Soviet Union are immense. It has extremely rich deposits of minerals of all kinds, the geological investigation of which is being conducted with great energy. The known geological reserves of oil today amount to 8,700 million tons (in tsarist times they were estimated at 800 to 900 million tons). The oil reserves of the U.S.S.R. exceed those of all other countries of the world combined. The known coal reserves have increased in the last 20 years from 230,000 million tons to 1,654,000 million tons. The coal reserves of the U.S.S.R. are second only to those of the U.S.A. The U.S.S.R. has the largest water power resources in the world, and the largest deposits of minerals suitable for fertilizers, and of manganese and ferrous ores. The deposits of high-grade ferrous ores (with an iron content of about 62 per cent) are estimated at 10,600 million tons. This does not include the huge deposits (estimated at 250,000 million tons) of the poorer ferrous ores of the famous Kursk Magnetic Anomaly. The Soviet Union is rich in non-ferrous metals—copper, zinc, lead and rare metals; it has vast deposits of gold.

The U.S.S.R. has the largest timber resources in the world. Thirty-eight per cent of its surface is covered by forest. From the Finnish border along the northern part of the U.S.S.R., in Europe and Siberia, there stretches a vast forest zone about 600 miles wide. Here there are still

millions of square miles of virgin timber never touched by the hand of man. The forests of Siberian conifers constitute the last important source of supply for the world's paper industry.

The soil of the Soviet Union is unsurpassed in fertility and suitability for agricultural purposes. Of a total arable area of about 1,037,400,000 acres, only about 333,450,000 acres have as yet been brought under cultivation (including 247,000,000 acres under cereal crops). The following table, based on statistics compiled by the International Agrarian Institute in Rome for 1935-36, shows the relative grain areas and output of the Soviet Union and other countries.

GRAIN AREA (*acres*)

	<i>Wheat</i>	<i>Rye</i>	<i>Barley</i>	<i>Oats</i>
U.S.S.R. . . . .	96,330,000	59,250,000	22,230,000	44,460,000
Other countries	249,470,000	46,930,000	71,630,000	101,270,000
Of which: U.S.A.	59,280,000	2,470,000	7,410,000	34,580,000

GRAIN OUTPUT (*millions of tons*)

	<i>Wheat</i>	<i>Rye</i>	<i>Barley</i>	<i>Oats</i>
U.S.S.R. . . . .	31	21	9	18
Other countries	97	25	34	49
Of which: U.S.A.	17	1	6	17

It is clear from these figures that the Soviet Union holds the leading place in the world's production of grain. It accounts for about one-quarter of the world's output of wheat, nearly one-half of the output of rye and over one-quarter of the output of oats. In recent years agriculture in the Soviet Union has made considerable progress, and the above figures have been greatly exceeded.

Before the first world war there were about 20 million peasant farms on the present territory of the Soviet Union. They cultivated the soil with the most primitive implements. A census taken in 1910 shows that the peasants had 10 million wooden ploughs and 17,700,000 wooden harrows. Thanks to collectivization, the situation has radically changed in the past ten years. The peasant's house, household garden and orchard, cow, pigs and

poultry used for the requirements of his family, constitute his "family farm" and continue to remain his personal property. The land, however, forms part of the large-scale farm run on collective lines with the most modern agricultural machinery. Data for January 1939 show that the equipment at the disposal of the collective farms includes 475,000 tractors, 150,000 harvester combines, over 170,000 motor trucks, hundreds of thousands of tractor-drawn ploughs, machine threshers and other machines. Up-to-date agricultural equipment is employed more effectively and efficiently in the U.S.S.R. than anywhere else in the world.

Besides the employment of modern machines, other methods are being adopted for the improvement of harvests. In regions subject to drought, wooded zones are planted as a protection from the dry winds. Irrigation is bringing millions of acres of new land under cultivation. The use of sorted seed has assumed large dimensions. The method of vernalization, a highly valuable discovery of Soviet scientists, is raising the crop yield considerably. The experience of Canada in the selection of early-ripening varieties is being borrowed to spread agriculture farther and farther to the North. The northward advance of fruit growing has also been made possible by the methods devised by the famous horticulturist, I. V. Michurin.

As a result of these measures, agricultural output in the U.S.S.R. is now double that of 1913.

Industry in the Soviet Union has made immense progress during the past ten years. Russia in tsarist days was a poor, agrarian country. The peasants starved, but the country exported agricultural produce in abundance, purchasing from abroad machinery, manufactured goods and luxury articles. The majority of the industrial plants in Russia belonged to foreign capitalists—British, French, Belgian and German. Of this pre-war industry, practically nothing is left today. An absolutely new industry has sprung up in its place. New branches of manufacture have been created which were unknown in Russia in tsarist times: machinery, tractors, automobiles, aircraft, harvester

combines, chemicals, etc. In this the Soviet Union was aided by American engineers and skilled workers.

By 1937, over 80 per cent of the industrial output of the country was already being derived from new plants which had been built or entirely reconstructed in the period of the First and Second Five-Year Plans. Today the proportion of output from new plants to total output is even greater. In no other country in the world is industry equipped with such new and up-to-date machinery as in the Soviet Union.

The rapid increase in the number of industrial plants has been accompanied, especially in the last ten years, by a rapid increase of output.<sup>1</sup> Whereas, after the severe economic crisis which began in 1929, industrial output in capitalist countries attained in 1937 barely 103.5 per cent of the output of 1929, and in the second half of 1937 again declined under the influence of a new crisis, the total output of industry in the U.S.S.R. in 1937 amounted to 424 per cent of the output of 1929, which signified a seven-fold increase compared with pre-war output. In 1938 the total industrial output of the U.S.S.R. attained 477 per cent of the level of 1929. In the capitalist countries, on the other hand, industrial output in 1938 was 13.5 per cent less than in the previous year and dropped to 91 per cent of the level of 1929.

Its immense growth of industrial output in the past ten years has advanced the Soviet Union to the ranks of the foremost industrial countries. Its output is now the largest in Europe and the second largest in the world, yielding place only to that of the United States. However, as regards industrial output per head of population, the Soviet Union still lags behind a number of the leading capitalist countries. In its Third Five-Year Plan, the U.S.S.R. is tackling the task of making good this lag.

The Soviet Union has immense achievements to record in the sphere of productivity of labour. During the Second Five-Year Plan alone (1933-37), productivity of labour

<sup>1</sup> This was written in 1938. For the latest figures the reader should consult *Voznesenskiy's Report* in the present volume.

in large-scale industry increased by 82 per cent (as against a planned increase of 63 per cent for this period); the increase in the building industry was 83 per cent. The movement of the Stakhanovites—that is, workers, peasants and others who have mastered the technique of their jobs and who set unprecedented records in productivity of labour—is spreading wider and wider. This is facilitated by the cultural revolution that took place in the U.S.S.R. during the period of the Second Five-Year Plan. In that period the number of elementary and secondary school pupils increased from 21,300,000 to 29,400,000, the number of pupils in the 5th-7th year groups having doubled, and the number of pupils in the 8th-10th year groups having increased fifteen-fold.

Immense educational and cultural work is being carried on. Illiteracy, that shameful heritage of tsarist times, has disappeared. Nearly all workers receive a technical training at spare-time courses. The result of the tremendous increase in the number of schools is that an even larger proportion of the young workers now entering employment have received a secondary education. This, together with the expansion of industry and the progress in industrial technique, guarantees a continuous rise in productivity of labour.

In the days when economic disruption was at its height, Lenin set before the Soviet country the aim of overtaking and outstripping the technically and economically advanced capitalist countries. Today we see this bold aim being realized.

The building of a new industry was accompanied by the reconstruction of the railway system. The total freight carried in 1938 was 229,210,000,000 ton-miles, as compared with 105,259,000,000 ton-miles in 1933. Total length of railway line reached 54,000 miles in 1938, as against 36,000 miles in 1913. The Soviet Union is second only to the U.S.A. in length of railway line. However, in view of the gigantic requirements of the country, the present length of line is obviously inadequate. The construction of new lines is proceeding steadily; in the period



of the Third Five-Year Plan it is proposed to put into operation 6,800 miles of new railways.

The Soviet Union has the greatest length of navigable river in the world. The number of navigated and timber-floating routes in operation is increasing from year to year, their total length amounting to 83,000 miles in 1938, as compared with 47,000 miles in 1913. Canal construction is making it possible to create a connected system of waterways covering the whole country. The canals now under construction will interconnect the Black Sea, the Sea of Azov, the Caspian Sea, the Baltic, and the Arctic Ocean.

The vast territory of the Soviet Union necessitated the utmost development of aviation. In 1938, the total length of regularly operated air route was 71,000 miles.

Rapid industrial growth has enabled the Soviet Union to free itself from the foreign dependence to which tsarist Russia was subject. This was essential not only from the economic standpoint, but also to render the country capable of defending itself from the frankly aggressive intentions of certain neighbouring states. The Red Army is being supplied by Soviet industry with all it requires to repulse an aggressor. Had it not created its own heavy industry—the manufacture of machinery, chemicals, etc.—the Soviet Union would have been defenceless in face of the threatened attacks of fascist aggressors.

However, the U.S.S.R. has made itself independent of foreign countries not with any idea of economic self-sufficiency or of deliberately curtailing its foreign trade. On the contrary, the next few years will undoubtedly witness a growth in the foreign trade of the Soviet Union. It is worth noting in this connection that the Soviet Union has no foreign debt. It always meets its current obligations with the utmost punctuality, in sharp contrast to most capitalist countries, which during the crisis of 1929–33 suspended payment on their foreign loans. The large and rapidly growing gold industry of the Soviet Union enables it to increase its imports without having recourse to foreign borrowings.

The factors which have promoted the U.S.S.R. to a foremost place among the economic powers of the world, second only to the U.S.A., are its vast natural resources, the rapid increase and cultural development of its population, and its social system, which precludes the possibility of economic crises and under which any increase in production benefits all citizens. There is no obstacle to the further progress of the Soviet Union except the menace of foreign attack.

PLACE OF THE U.S.S.R. IN WORLD PRODUCTION<sup>1</sup>

	1913		1936	
	Place in World	Place in Europe	Place in World	Place in Europe
Gross industrial output . . . . .	5th	4th	2nd	1st
Machine building . . . . .	4th	3rd	2nd	1st
Agricultural machine building . . . . .	5th	3rd	1st	1st
Tractors . . . . .	—	—	2nd	1st
Harvester combines . . . . .	—	—	1st	1st
Automobiles and trucks . . . . .	—	—	6th	4th
Of which: trucks . . . . .	—	—	2nd	1st
Electricity . . . . .	15th	7th	3rd	2nd
Coal . . . . .	6th	5th	4th	3rd
Iron ore . . . . .	5th	4th	2nd	1st
Steel . . . . .	5th	4th	3rd	2nd
Raw copper . . . . .	7th	3rd	5th	1st
Aluminium . . . . .	—	—	3rd	2nd
Gold . . . . .	4th	1st	2nd	1st
Superphosphates . . . . .	16th	13th	3rd	1st
Beet sugar . . . . .	2nd	2nd	1st	1st

<sup>1</sup> See also the pictorial graph on p. 360.

## ECONOMIC PLANNING

*By Professor J. Joffe*

**T**HE Soviet Union is the only country in the world where crises and unemployment and anarchy of production are unknown; for it is the only country that is developing according to plan. The tremendous advantages accruing from planned economy are felt by every worker, collective farmer and intellectual in the course of the thousand and one little things that make up their everyday life.

Just consider the facts. In the eighteen years since the conclusion of the Civil War, there has not been a single year in which output has declined or has been stagnant. The right to work is guaranteed by the Soviet Constitution and it is already nine years since unemployment was abolished once and for all. There is not another country in the world that has experienced such rapid cultural progress as the Soviet Union, progress which embraces all parts of its vast territory. A backward and poverty-stricken country in the past, it has now become a mighty industrial power possessing a first-class army with the most up-to-date equipment.

### *What is Planned Economy?*

The economy of any country is an exceedingly intricate mechanism. That of the Soviet Union includes thousands of factories and mills, 243,000 collective farms, a vast transport system—railways, waterways, motor transport and airways—hundreds of thousands of stores and shops, and an extensive network of schools and other educational establishments.

Every Soviet factory, collective farm, university, etc., works according to a definite plan. This plan is given the effect of law and is binding on each and every plant, institution, etc. All the resources of the country are mobilized to fulfil the plan adopted.

The plan of every industrial establishment contains definite figures stipulating the quantity and quality of its output for the coming year. The plan determines production costs, the sales price and marketing conditions of its products, the number of workers, the office and technical staff it is to employ, wages, the standards of labour productivity, the expenditure quotas for raw material, fuel and other supplies and the standards of depreciation of machinery. Every collective farm receives a plan which stipulates the acreage of various crops, the agronomic measures it must apply, the harvest yield for the various crops, etc. Every store has a plan fixing its volume of trade and the amount of overhead expenses.

In the Soviet Union, as in any highly developed country, the various branches of economy are closely interwoven and interdependent. This interdependence finds its reflection in the plans of the various branches of the national economy, which provide for such correlation in the development of the various branches of economic life as to secure the most rational and rapid progress of the country as a whole.

The plan for the development of the national economy of the U.S.S.R. is a national programme which defines the work to be accomplished by tens of millions of people. This circumstance means that highly important and intricate demands are made of the plan and presupposes the existence of such conditions as ensure the possibility of carrying out planned economy.

### *The Organization of Planning*

In the Soviet Union the land, industry, the banks and the transport system are state property, that is, belong to the whole people. All industrial establishments, state farms (large state-owned agricultural establishments), trading enterprises, schools, universities, medical institutions and other economic or cultural institutions and establishments are under the jurisdiction of the various People's Commissariats. The work of the collective farms is governed by a special set of rules adopted separately

by each collective farm on the basis of the Model Rules adopted by the Second All-Union Congress of Collective Farm Shock-workers and endorsed by the government. In conformity with these Rules, the collective farms conduct their work according to plan and strictly adhere to the production plans fixed by the government. This enables the state to plan agricultural as well as industrial development.

Thus, in the Soviet state all the material wealth of the country belongs to the people. Through its organs the state directly supervises the entire life of the country, concentrating full power in its hands (endorsement of plans, appropriation of financial and material resources, appointment of executives, etc.).

The drawing up of plans and supervision of their fulfilment is one of the most important aspects of the work of the People's Commissariats. Planning is not the prerogative of any one organization, but a component, organic part of the activities of the whole state and economic apparatus of the country. The highest organ of state authority of the U.S.S.R. is the Supreme Soviet of the U.S.S.R. The highest executive and administrative organ of state authority of the Union of Soviet Socialist Republics is the Council of People's Commissars of the U.S.S.R., which confirms the national economic plan and supervises its fulfilment. Attached to the Council of People's Commissars of the U.S.S.R. is the State Planning Commission with a staff of prominent experts in all fields of economy and culture. Similar state planning commissions function under the Councils of People's Commissars of the various republics. Planning commissions have likewise been set up under the executive committees of Soviets of all territories, regions and districts of the U.S.S.R.

The plans for the various industries are drawn up by the People's Commissariats, which maintain planning departments for this purpose. Similar departments have been set up in all factories, mills, institutions, etc. Thus, there are no organizations in the U.S.S.R. engaged in abstract planning. All state bodies have planning

departments or commissions under them and this ensures unity of leadership.

### *How Plans are Drawn Up*

The method by which plans are drawn up may best be illustrated by the example of the annual plans for industry. Besides annual plans, quarterly plans are also drafted, which, as part of the yearly plan, provide a concrete programme for the current three months.

Work on drawing up the annual plans usually begins six or seven months before the new year. On the basis of data submitted by the People's Commissariats and the State Planning Commission, the government sums up the results of plan fulfilment for the current year. In these summaries, which are based on a thorough analysis of the economic trends in the country, the government rates progress made in the fulfilment of the yearly plan and the Five-Year Plan as a whole. It establishes which branches of industry, etc., are lagging behind in plan fulfilment and the reasons for this, which branches are successfully carrying out their plans and the means they employ to achieve this. This work furnishes a comprehensive picture of plan fulfilment throughout the country.

The government also determines the chief tasks that must be carried out in the next few years. These tasks are formulated in the Instructions for Drawing up Plans.

The general features of all economic plans are defined as follows in Article II of the Constitution of the U.S.S.R.:

"The economic life of the U.S.S.R. is determined and directed by the state national economic plan with the aim of increasing the public wealth, of steadily improving the material conditions of the working people and raising their cultural level, of consolidating the independence of the U.S.S.R. and strengthening its defensive capacity."

All the elements of the plan are subordinated to the purpose of carrying out these aims.

The preliminary programme fixed by the government

gives due consideration to the close connections between various industries. Thus, the programme for increasing the production of pig iron requires a corresponding increase in the output of coke and iron ore. The programme for increasing school attendance presupposes a preliminary investigation as to how the additional school children will be provided with school buildings, teachers, textbooks, budgetary funds, etc. Hence, the focal point in the work of all planning bodies is to map out correct proportions for the development of the various branches of economy and culture. The Soviet Government bases its plans on a detailed calculation of potentialities. In working out the preliminary plan, the planning commissions and the government carefully ascertain the visible natural resources, the extent to which they have been prospected and the possibilities of their industrial exploitation, the existing production capacity and the extent to which newly built establishments are ready for operation, the amount of available labour, power, etc.

However, existing production capacities cannot serve as the sole criterion in mapping out production programmes if the government is convinced that a drastic increase in the output of one branch or another branch of industry is necessary.

A striking instance of this was the 1935 plan for the construction of railway wagons. In 1934 the Soviet railways were unable to meet the demands made upon them by industry and agriculture. Among other measures designed to improve the situation the Soviet Government decided drastically to increase the number of railway wagons. The table below shows the increase in annual output of wagons up to 1934 (computed in two-axle units):

1913	..	..	..	..	..	14,832
1932	..	..	..	..	..	23,111
1933	..	..	..	..	..	23,614
1934	..	..	..	..	..	33,513

The capacity of the wagon-building plants was approximately 40,000 wagons a year. The government decided that

to ensure the smooth functioning of the transport system industry must triple the production of wagons in one year's time and place 90,000 wagons on the line in 1935. Other factories co-operated in carrying out this task. This did not present any particular difficulties, for the entire industry of the country belongs to the whole people and is in the hands of the state. As a result of all the measures taken, 90,758 wagons were built in 1935. This example illustrates the tremendous potentialities of the national economy when it is organized as one planned whole.

### ***Key Problems***

In the instructions for drawing up the plan the government indicates the key problems for the period covered by the plan, specifies the industries that will play a decisive part in fulfilling the plan and formulates their basic tasks.

The determination of the key problems is a factor of great importance in drawing up plans, for the plan fulfilment of all other branches of industry is regarded from the standpoint of the extent to which they ensure the fulfilment of the plan for the key industry.

The selection of one or another key problem for the period covered by the plan depends on the general economic and political tasks facing the country. Thus, for example, the chief economic task confronting the country in the Second Five-Year Plan period (1933-7) was the technical reconstruction of the Soviet national economy, the introduction of up-to-date machine technique in all branches of the national economy. In view of this the development of the machine-building industry was singled out as the key problem of the plan. The plans for the development of the iron and steel industry and of non-ferrous metallurgy and the plans for capital construction were considered from the point of view of the extent to which they would ensure the development of the machine-building industry.

During the Second Five-Year Plan period the output of the machine-building industry increased from 9,400,000,000 rubles in 1932 to 27,500,000,000 rubles in 1937.



*Participation of the Masses in drawing up the Plan*

When the People's Commissariats receive the government instructions for drawing up their plans they proceed to determine the preliminary programmes of each of the industries under their jurisdiction. The Chief Administration of the given industry defines the plan for each establishment under its control.

These preliminary plans are then discussed by both the management and the trade union, as well as other public organizations of the establishment. At their production conferences the workers, both manual and clerical, discuss whether all potentialities for increased output, higher labour productivity and reduction in production costs have been taken into account. These conferences thoroughly analyse the experience of production brigades and of Stakhanovite workers who have attained a high degree of efficiency, and make amendments to the proposed plan based on the specific nature and potential capacity of the given establishment.

All these plans, with additions and amendments, are then returned to the appropriate People's Commissariat, which, after due examination, draws up a single, uniform plan for the whole Commissariat and submits it to the government for approval. At the same time, on the basis of data furnished by the establishments and industries under its control, the People's Commissariat submits to the government an estimate of the amount of fuel, electric power, raw material, working capital and funds for capital investment required for the fulfilment of its production programme.

*Endorsement of the Plan*

All plans submitted to the government for endorsement are first of all studied by the State Planning Commission, which submits its opinion on each of these plans. In formulating the final plan for the various People's Commissariats, the government takes into account the findings of the experts consulted and of the State Planning Commission. The plan adopted by the government becomes law.

On the basis of the plan adopted by the government, the People's Commissariats establish the mandatory production programme for each of their establishments.

The working people of the Soviet Union not only take part in the discussion and drawing up of the plans, but are also vitally interested in their fulfilment. The production programmes laid down by the government are the minimum of what must be accomplished. It is a matter of honour for the workers of every factory to over-fulfil their plan. Premiums are awarded to individual workers and factory managers who succeed in over-fulfilling the plan. The foremost people in industry, agriculture, transport, education, art, trade and other spheres of activity are accorded high honours and enjoy great popularity. Thousands of them have been decorated by the government for their exemplary work.

### *Supervision of Plan Fulfilment*

Drawing up the plan is only the first stage of the work of planning. Execution is no less important. This depends primarily on the proper organization of the work of the millions of people who have to fulfil these plans. The government organizes constant control over plan fulfilment, thus ensuring the timely carrying out of the plan. But this control is not the function of state organs alone. The working people themselves take part in it. Figures on plan fulfilment in the key industries are published in the newspapers daily and are thus available to the general public.

The government closely follows the course of fulfilment of the plan, directs the activities of all state and co-operative organizations and, when necessary, renders assistance to them. The instructions and assistance given by the government are a tremendous mobilizing and organizing factor, not only in respect to those industries or establishments for which they are intended but for the entire national economy. A few years ago the coal industry displayed a tendency to lag behind. The government and the Central Committee of the Communist Party called together the best miners for a conference in Moscow. The

speeches of these rank-and-file workers revealed the cause of this lagging. On the basis of the factual material supplied by this conference, the government ordered that the system of wages be revised, that engineers and technicians be assigned to work directly in the pits, etc. These measures soon brought results—coal output began to climb, increasing by 23 per cent in one year.

Besides assistance in the form of instructions, advice and the assignment of additional forces, the government in the case of many factories allots additional funds and materials and extends the scope of capital construction. This day-to-day supervision and assistance is one of the most important and decisive factors of planning in the Soviet Union.

### *What are the Necessary Conditions of Economic Planning?*

Private ownership of the means of production has been abolished in the Soviet Union, and the means of production are the property of the whole people. Hence every enterprise is operated not with a view to increasing the profits of a private owner, but in the interests of the whole people.

The steady improvement in the standard of living of the working people creates an unlimited home market. The continuous growth of the incomes of the working people ensures a ready market for the ever-increasing output of Soviet industry and agriculture.

The abolition of private ownership of the means of production and the concentration of the administration of the national economy in the hands of the state provide the necessary conditions for the harmonious development of all industries. This excludes the possibility of overproduction in any branch.

And, finally, a factor of vital importance is the moral and political unity of the Soviet people, the absence of exploitation, the deep interest of all the working people in the development of their country, their branch of industry, their factory or other institution. The direct connection between the growth of the country's public wealth and the material standards of each working man is so obvious that

it serves as a powerful stimulus for the active participation of the whole people in the administration of the country in accordance with a uniform Socialist plan.

## MINERAL RESOURCES OF THE U.S.S.R.

*By I. M. Gubkin*

MEMBER OF THE SUPREME SOVIET OF THE U.S.S.R. VICE-PRESIDENT OF THE ACADEMY OF SCIENCES OF THE U.S.S.R.

FROM the geological standpoint, the territory of the U.S.S.R. represents a rich complex of formations of highly varied structures and ages.

In pre-revolutionary times, useful minerals were studied in Russia by great scientists like Lomonosov and Kar-pinsky. The former is justly regarded as the founder of the science of geology in Russia, the latter as the father of Soviet geology. The science reached its full amplitude of development, however, only after the establishment of the Soviet government, in the period of the First and Second Five-Year Plans.

In tsarist days, the mining industry was concentrated at three or four points, chiefly in the European part of the country. There were only a few small mining centres in the Asiatic part—in the Altai Mountains (non-ferrous metals) and at Kuznetsk (coal). The mines, as a rule, belonged to foreign capitalists. The Geological Service confined its activities chiefly to geological charting; it did practically nothing in the way of exploring and prospecting for useful minerals. The number of geologists was ridiculously small, nor were there any special schools to train them.

The fact that the mineral resources of the country were almost entirely unknown created difficulties for the Soviet government in its earliest years. The rapid expansion of industry created an enormous demand for ores and fluxes. Mineral fertilizers were needed for agriculture. Chemical and other industries were also clamouring for raw materials.

As we know, the First Five-Year Plan, despite the vastness of developmental work it envisaged, was fulfilled in four years, some of the most important branches of the mining industry—oil, for example—fulfilling their plans even in  $2\frac{1}{2}$  years. This was accomplished in the face of tremendous difficulties and obstacles, which, in the case of minerals, were still further complicated by the fact that they not only had to be discovered, but to be discovered and surveyed precisely in the places where they were needed.

In the past, the concentration of industry in the European part of Russia was due to the colonial policy of the tsarist government. The more remote regions of the country, occupied mainly by non-Russian peoples, were looked upon by the government purely as reserves for the supply of Central Russia with agricultural produce. As a consequence, the vast mineral deposits of Siberia, Kazakhstan, Central Asia and the Caucasus (with the exception of oil in the case of the latter) not only remained unused, but were not even discovered and studied.

About 90 per cent of the coal output of Russia in tsarist times came from the Donetz Basin; over 60 per cent of the iron ore from Krivoi Rog; and 95 per cent of the oil output from the Baku fields. This meant that oil had to be transported to Siberia and the Far East from Baku, a distance of thousands of miles; and the position was similar in the case of coal and the products of the metallurgical industry.

The tremendous developments planned by the Soviet government demanded the rapid and systematic study of the productive forces of the country, including its mineral resources. This, in turn, demanded the development of geological exploration and survey on a very wide scale.

The first task undertaken was the training of skilled forces for this work, for which purpose a number of specialized medium and higher educational establishments were opened. By the time the First Five-Year Plan was inaugurated, thousands of geologists were already engaged in studying the mineral resources of the U.S.S.R. Today

the number of Soviet geologists can be counted in tens of thousands.

The second step taken by the Soviet government in the realm of geological survey and research was to entrust all branches of the work to one body, the Geological Board. The effect of this was to place geological survey and research on strictly planned and systematic lines, and to ensure the rational employment of men and materials and the rapid and fullest use of the results obtained.

Nowadays, the most up-to-date equipment is used in geological work in the U.S.S.R. Originally it had to be obtained from abroad, but it is now being produced at home.

The abolition of private property in land has opened up unlimited possibilities for geological science in the U.S.S.R. In pre-revolutionary days, the work of the geologist was hampered by the existence of private boundaries, an impediment which has now been entirely removed.

Since the establishment of Soviet government many minerals have been discovered which were formerly unknown in our country—among them apatites, potassium salts and borates. The apatite deposits of the U.S.S.R. are the largest in the world; those of the Kola Peninsula are estimated at 2,000 million tons. The potassium salt deposits of Solikamsk are computed at 18,000 million tons (in potassium oxide equivalent). The U.S.S.R. possesses 27,700 million tons of these salts, or 85 per cent of the world's known deposits. An expedition of the Academy of Sciences has discovered in Western Kazakhstan new rich deposits of potassium salts whose composition is such as to permit the extraction from them of potassium sulphate—an excellent fertilizer for cotton, tobacco and other crops. In close proximity, near Lake Inderrich, deposits of borates, the raw material of boron, have been discovered.

Voluntary study, individual and collective, of the natural resources and productive potentialities of the various regions of the country is very widespread in the

U.S.S.R. There are large numbers of local natural history societies and clubs, as well as museums, national reserves and so on. Numerous deposits of useful minerals have been discovered by such voluntary organizations.

Important contributions to the knowledge of the natural resources of the country have been made by individual amateurs. The mine laboratory in the village of Bystrovka (Kirghiz Republic), for example, has thousands of specimens of valuable metallic ores found and donated by collective farmers and trappers. Information furnished by a local peasant by name of Mangulov has resulted in the discovery of five outcrops of lead and asbestos.

The following brief survey shows what has been accomplished by the Soviet Union in the location of mineral deposits and their economic value.

### ***Power-Producing Minerals***

*Oil.* In tsarist times the oil reserves of Russia were estimated at eight or nine hundred million tons. A computation made at the time of the International Geological Congress in 1937 placed the figure of 6,500 million tons, the proven oil reserves being computed at 4,000 million tons. In the course of 1937 and 1938 geological survey work in the Volga region and on the western slopes of the Urals began to yield results. There has been a considerable increase in the estimated oil reserves of the Azerbaijan Soviet Socialist Republic and other of the older oil-bearing regions, as well as in the recently discovered oil-bearing regions in the Bashkir, Daghestan and other Soviet republics.

In 1938 the geological oil reserves of the U.S.S.R. were estimated at 8,700 million tons, the proven oil reserves exceeding 4,600 million tons. There has been a marked change in the geographical disposition of the oil industry, which shows a distinct eastward movement. That considerable oil deposits will be discovered in the near future in Siberia is now beyond doubt. The known oil reserves of the U.S.S.R. at the present time considerably exceed the aggregate reserves of other countries.

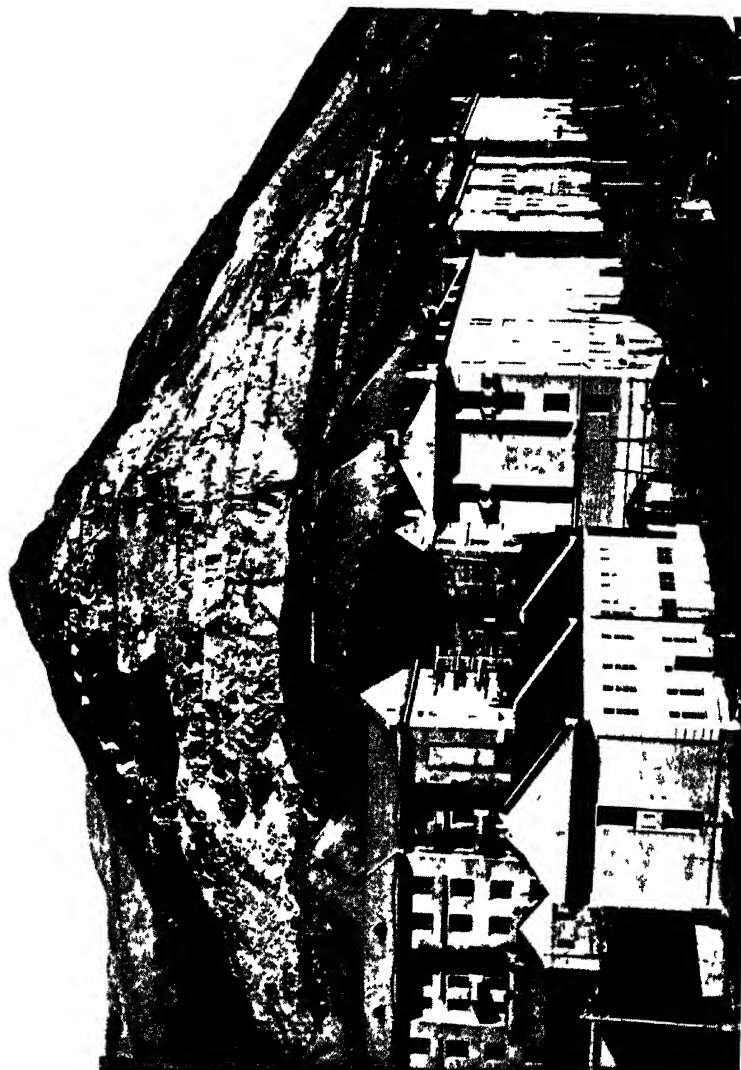


THE  
MAKEYEVSKY  
WORKS

The Best Metal-  
lurgical Works in  
the Soviet Union



KIROVSK  
Apartment Surface  
Mines and Works  
Dwellings



*Coal.* The geological reserves of coal in Russia were estimated in 1913 at 230,000 million tons. Computations made at the time of the International Geological Congress in 1937 fixed the coal reserves of the U.S.S.R. at 1,654,000 million tons. Thus, the known coal reserves of the U.S.S.R. have increased sevenfold in twenty years—sufficient to cover the country's requirements for several centuries. The coal reserves of the U.S.S.R. are exceeded only by those of the U.S.A.

The discovery and investigation of new fields has resulted in a considerable change in the geographical disposition of the coal industry. In tsarist times, Russia's coal requirements were almost entirely supplied from the Donetz Basin. Today, in addition to this source, the U.S.S.R. derives a substantial part of its coal from the Urals, Kazakhstan, Siberia, the Soviet Far East, Central Asia, the Moscow region and other fields.

Soviet coals are of exceptionally high quality, only 20 per cent being brown coal, the rest hard coal.

Recent geological investigations furnish grounds for expecting the early discovery of new, rich coalfields, chiefly in the eastern part of the U.S.S.R., the Central Asiatic republics and Kazakhstan.

### *Ores*

*Iron.* The geological reserves of iron ore in the U.S.S.R. are estimated today at 10,600 million tons, against 2,000 million tons in 1913. In addition, there are vast deposits of ferri-ferrous quartzite (estimated at 250,000 million tons) with an iron content averaging 35 per cent. The process of extraction of iron from ferri-ferrous quartzite on industrial lines has been fully worked out, but owing to the abundant deposits of iron ore, ferri-ferrous quartzite is regarded as a reserve source of supply.

*Chromite.* Chromite deposits were entirely unknown in Russia in tsarist times. Deposits of chromite ore in the U.S.S.R. today are estimated at over 16 million tons.

*Manganese.* Manganese deposits were estimated in 1913 at 167 million tons; today, geological investigations have

raised the estimate to 750 million tons. The high quality of Soviet manganese is generally recognized.

*Copper.* Copper deposits were estimated in 1913 at 62,700 tons (pure metal); the estimate today exceeds 19,500,000 tons.

*Aluminium.* No deposits of aluminium ore were known in Russia in tsarist times. The U.S.S.R. today has a large aluminium industry, whose ore requirements are entirely home supplied. The earth used is bauxite, the estimated reserves of which exceed 30 million tons. In addition to bauxite, the U.S.S.R. possesses large deposits of other clays with a large alumina content (nepheline, cyanite, alunite). The process of extraction of aluminium from these earths has been worked out and will be applied on industrial lines.

*Chemicals.* In this field attention has been mainly devoted to mineral fertilizers, which in tsarist times Russia used to import.

*Apatite.* As already mentioned, the apatite reserves of the U.S.S.R. are estimated at 2,000 million tons.

*Potassium Salts.* Deposits of potassium salts were unknown in the U.S.S.R. until 1929. The deposits discovered in that year in Solikamsk contain 18,000 million tons of potassium oxide.

The U.S.S.R. has larger deposits of minerals suitable for fertilizer purposes than any other country in the world.

In recent years rich deposits of boron—the only mineral hitherto not found in commercial quantities—have been discovered in the U.S.S.R.

Thanks to the broad scope on which geological research has been conducted, it is now known that the territory of the U.S.S.R. contains all the useful minerals in commercial quantities. Geology is held in high esteem by the Soviet government as a science which can contribute largely to the welfare and prosperity of the population. In the U.S.S.R. the land and its resources belong to the people and are completely at the disposal of the people. And all that is done in the field of geology, the efforts both of the professional and amateur geologists have one

purpose in view—to benefit the working people of the country and to further its industrial progress.

## THE INDUSTRIAL MIGHT OF THE U.S.S.R.

*By I. Bardin*

MEMBER OF THE ACADEMY OF SCIENCE OF THE U.S.S.R.

**T**SARIST Russia was an economically backward country. Her autocratic form of government acted as a brake on the development of her forces of production. This explains her national poverty and economic dependence on the more advanced capitalist countries, despite her vast natural resources. To illustrate concretely the low level of her industrial development, suffice it to state that in 1913 Russia occupied 15th place in the world in electric power production, 6th place in the output of coal, 5th place in pig iron and steel smelting and 7th place in copper manufacturing. Many branches of industry, such as the production of aluminium, nickel, rare metals and synthetic nitrogen, did not exist at all. High-grade steels, ferro-alloys and calcium carbide were almost all imported, as were machine-tools and other machinery.

The set-back suffered by Russian industry during the war years was catastrophic. Beginning with 1915, output steadily diminished until in 1920 it had dropped to a bare minimum and in some cases come to a complete standstill.

The Soviet government set up after the triumph of the Great October Socialist Revolution fully realized that the building of Socialism necessitated a strong industrial base, powerful enough to render the country independent, in respect to its technical and economic requirements, of the hostile capitalist states encircling it, and resourceful enough to reconstruct the several branches of the country's economy, including its industry as well as its agriculture. This new base, once established, would lead to abundance

of manufactured goods and agricultural produce, so that all demands of the population could be met.

Nineteen-nineteen and nineteen-twenty were the most difficult years for the young Soviet republic. Enemies encompassed it on every side. It fought valiantly for its life on numerous fronts against the White Guards and the forces of foreign intervention; industry and transportation lay prostrate; the people were famished and lacked the barest necessities; the direful consequences of the Entente blockade were felt everywhere.

In this period of economic storm and stress, Lenin and Stalin organized the people for the struggle against intervention, starvation and blockade. They not only foresaw and formulated the problems awaiting solution by peaceful creative effort, but also prepared the ground for the work which this solution entailed. This was the time when, under their leadership, two hundred scientists, engineers and technicians drew up a plan for the electrification of the whole country and the introduction of modern machinery as the basis of its economic life.

This was likewise the time when H. G. Wells visited Lenin in the Kremlin and discussed with him this very plan. On his return to England the famous writer referred to Lenin as "the dreamer in the Kremlin." To Wells the drafting of electrification plans for a ruined and starving country, lacking even petroleum, was nothing but idle fantasy. The foreign bankers were of the opinion that without their credits and other assistance the Soviet republic would be unable to resuscitate its economy.

However, the realities of life upset these calculations. By 1928 all branches of industry had been restored to pre-war capacity. At once construction of new modern factories and mills commenced on a large scale. The best types of machinery were acquired; West-European and American production methods were being mastered. A number of state organizations for the designing of construction projects were set up, the staffs of which included prominent foreign talent. Numerous Soviet engineers, particularly of the young generation, were sent abroad to

study at leading industrial establishments. The adoption of the First Five-Year Plan by the Communist Party of the Soviet Union (Bolsheviks) and the Soviet Government ushered in a new epoch in the country's history. Its main provisions were the construction of numerous new factories and the economic opening up and development of new districts. Among the projects undertaken, primary importance attached to the creation of a new industrial base located in the east of the U.S.S.R., the Urals-Kuznetsk Basin combine.

In addition to the Magnitogorsk and Kuznetsk steel mills, each of them of record proportions, the list of industrial constructions in this area included numerous other plants—for the non-ferrous metal, chemical and machine-building industries. The scale of construction and the difficulties encountered in the organization of production on these projects had never before been paralleled anywhere in the world.

Proper distribution of industrial establishments is not the only accomplishment to the credit of the Communist Party and the Soviet Government. They also successfully tackled the problem of raising labour productivity, which was of the utmost importance to the country. The Communist Party fought energetically against bureaucracy, which shackled initiative at work and hindered active interest in their work on the part of the masses. Socialist emulation was widely developed and breaches of labour discipline vigorously combatted. The Stakhanov movement for greater labour productivity from its commencement in the coal industry has spread to all industries and taken hold of transportation and agriculture. Grounded as it is on the efficient operation of modern machinery, it has wrought a revolution in production.

The new constitution of the U.S.S.R. is the legal enactment of the achievements of its victorious working class, and of the Socialist system of society in the country. Planned economy, free of crises and based on the Socialist ownership of the means and instruments of production, the right of all to engage freely in creative work, the right

to education, the opportunity afforded to every Soviet citizen to develop and apply his talents and abilities, the birth of a new attitude toward work, which is esteemed a matter of supreme honour, have served as the foundation on which is based the unparalleled success achieved in the transformation of people, society and nature itself.

Full of daring, the new Soviet technical intelligentsia is carrying out the transition from the technique of the nineteenth century, and, in a number of branches of industry, from the technique of the Middle Ages, to the latest technological processes, the most developed that the mind of man has conceived. Much work was needed to train such a generation, and in this work the entire Soviet people, guided by the Communist Party and Stalin, its leader, participated.

The results achieved by Socialist labour in heavy industry are especially significant, for the development of heavy industry is a most difficult task even under favourable conditions. An enormous amount of work has been accomplished in this direction. The formerly existing branches of heavy industry have grown several times over and many new branches have been established, including the production of automobiles, aircraft, tractors, harvester combines, high-grade steel, ferro-alloys, nickel, aluminium, magnesium, cadmium, cobalt, tin, a great number of rare metals, plastic material, artificial fibre, industrial and synthetic rubber. In volume of output, Soviet industry has moved from fifth place in the world, occupied by tsarist Russia in 1913, to first place in Europe and second place in the world.<sup>1</sup>

In the coal industry output has increased 4.6 times from 1913 to 1937, the final year of the Second Five-Year Plan period. This industry has been completely re-equipped. The new coal districts in the east are likewise developing their production. The industry's degree of mechanization (88 per cent) is the highest of any country in the world. The comprehensiveness of this mechanization is a par-

<sup>1</sup> This is strikingly illustrated by the graph on p. 360.

ticularly important feature. Not only coal-cutting but to a considerable extent all other operations, including preliminary work and the sinking of pits, have been mechanized. Constantly perfecting their old and designing new models, the Soviet mining machinery plants supply the country's coal industry with all the modern equipment it needs.

In the Soviet Union the highly important problem of the subterranean gasification of coal has been solved in its technical and practical aspects. By the application of this Socialist technological process, coal can be used in its most convenient form (gas) and the miner's arduous toil is thus eliminated. Coal gasification has already been placed on a sound basis in the U.S.S.R.

The oil industry has fully mastered the technique of deep-well and high-speed drilling. The old oil fields are being exploited to the best advantage. The continuous prospecting of Soviet geologists for oil deserves particular mention. Their efforts have been crowned with great success: new oil fields have been located and equipped for production in the Urals and the Volga district. Sulphur-bearing oil (mined in the Bashkir Republic) is being refined with considerable success. Cracking and polymerization have made it possible to obtain high-grade aircraft fuel.

Compared with the output of tsarist Russia, the manufacture of iron and steel has grown more than fourfold. This increase is likewise the result of the introduction of modern machinery and methods. Powerful new, completely mechanized aggregates, blast furnaces, open-hearth furnaces, blooming mills and rolling mills of various descriptions have been installed and their operation is being mastered by the Stakhanovites.

High-grade steels and electro-metallurgical alloys are being produced on a large scale. This has enabled the U.S.S.R. to develop its machine-building, aeronautical, automobile and tractor industries and to equip the heroic Red Army with the most up-to-date armament, so that it is prepared to deal a crushing blow to any barbarous



horde of fascists that may venture to encroach on Soviet territory.

The U.S.S.R. already occupies second place in Europe and third in the world in the manufacture of aluminium. The building of nickel plants is proceeding apace, assuring increased nickel smelting. Production methods of other non-ferrous metals and of rare metals have also been mastered and, with the prospecting of the sources of raw materials, their output will rapidly increase.

Very important is the development of the production of numerous aluminium and magnesium alloys, of beryllium bronze and hard alloys with a tungsten and titanium base, as well as the manufacture of articles made of tantalum, rubidium, caesium and other such metals. The steadily increasing practice of using substitutes (acid-proof cements, lining tiles, acid-proof earthenware and plastic materials) in place of non-ferrous metals is also worthy of note.

The gold output of the U.S.S.R. has advanced from fourth place in world production (1913) to second place.

Signal successes have marked the road of electrification upon which the Soviet Union has entered. On the threshold of its third Five-Year Plan period, the capacity of the Soviet Union's electric power stations was 7.6 times that of tsarist Russia, while the amount of electricity generated was 19.3 times the tsarist figure. The coefficient of utilization of station capacity is from one and a half to two and a half times as high as in the capitalist countries. The Lenin Hydroelectric Power Station on the Dnieper alone produces more electricity than did all the stations of tsarist Russia combined.

Remarkable strides have also been made by the Soviet chemical industry which was still in its embryonic state before the revolution. Under the Five-Year Plans, synthetic ammonia works have been built and put into operation in the south, the central districts and the Urals. The output of sulphuric acid has increased more than ten-fold since 1913, that of superphosphate more than twenty-fold, etc. In the case of sulphuric acid, the increase is due

to the erection and proper utilization of powerful towers as well as the application of Herreshof-Bayer contact processes. Soviet sulphuric acid plants are equipped with the latest mechanized ovens, electric filtration for the purification of the gas and powerful apparatus for the concentration of the acid. The Stakhanovites in these plants have increased the efficiency of the tower and contact processes. Cases are on record where the specified standards have been exceeded by as much as 400 per cent.

No bakelite or other composition materials were produced in tsarist Russia. Today they are used to manufacture not only numerous industrial supplies but also general consumers' goods.

Whereas before the revolution the annual output of rayon was 140 tons, artificial fibre production has now become a large industry.

The manufacture of synthetic rubber from ethyl alcohol, using the method invented by the late Academician Lebedev, is of great importance in securing the Soviet Union's economic independence. Eighty per cent of all rubber required in the U.S.S.R. for any purpose whatever is now produced artificially in Soviet plants. In tsarist days the country's chief rubber product was rubber footwear. Today the domestic production of rubber goods includes many other items, such as transmission and conveyor belts, hose and tyres. In 1938, 2.3 times as much rubber footwear was produced as in 1913. As the demand for rubber goods for industry as well as for the general consumer is rapidly growing, provision has been made to enlarge the raw materials supply base and build the necessary additional works. Thus the Third Five-Year Plan contemplates the construction of 13-15 additional synthetic rubber works.

Soviet engineers are tireless in their efforts to devise and master new, improved technological processes. In determining what method of mechanization is to be applied to any particular plant, quantity and quality of output are not the only consideration. Every endeavour must be made to render working conditions as favourable as

possible for the workers concerned. Thus, Soviet engineering talent is diligently applying itself to the problem of replacing pneumatic pick hammers and perforators by electric hammers and perforators, of introducing combines in working steep-gradient coal seams, so as to do away with blasting operations and cave-ins.

The campaign being waged in the U.S.S.R. for the thrifty and complete utilization of raw materials, for prevention of fuel, heat and electric power losses and the elimination of all waste of human energy is bound to yield great economies in view of the tremendous size of the country; and these economies in turn will ensure an extra increase in output, which implies increasing welfare for the people.

The rapid progress made by heavy industry in the U.S.S.R. has astonished the world. It is the result of the immense superiority of the Soviet Socialist system over the capitalist system: and this superiority has been made secure by the Stalin Constitution, which inspires the workers of Soviet heavy industry to strive for new victories and for the accomplishment of the stupendous tasks assigned in the Third Five-Year Plan.

## LIGHT INDUSTRIES' OF THE U.S.S.R.

*By D. Khazan*

ORDER OF LENIN. ASSISTANT PEOPLE'S COMMISSAR OF THE  
TEXTILE INDUSTRY OF THE U.S.S.R.

**S**OViet light industry—the industries producing consumers' goods—may be regarded as including nine major branches: cotton, linen, woollens, silk, knitted-goods, leather and footwear, fur, glass and clothing. All these industries were in the charge of the People's Commissariat of Light Industry until January, 1939, when a special People's Commissariat was formed to direct the

textile industry. These two commissariats control only the large, machine-equipped enterprises, the rest being locally controlled.

The successful building of a modern heavy industry—the industries, that is, which manufacture means of production—and the collectivization of agriculture have made it possible to reorganize light industry on up-to-date technical lines. Thus, in the two years 1936 and 1937 the textile industry was supplied with over 650 million rubles' worth of new machinery, all made in the Soviet Union.

Huge sums have been invested in building new factories in the light industries and reconstructing existing ones: 1,347 million rubles during the First Five-Year Plan period and 5,618 million rubles during the Second Five-Year Plan period.

The guiding principle in capital development in the Soviet light industries is to bring the manufacturing plants closer to the sources of raw material and to the consuming districts—particularly to the smaller national regions of the U.S.S.R.

In tsarist times no industries existed in the border regions of Russia. Heavy industry was confined to the central districts of the country and to one or two other districts, such as the Donetz Basin and the Urals. The light industries—particularly textiles—were also limited to a few central provinces.

The Soviet Government, in pursuance of its policy of creating real quality for all the nations and nationalities comprising the U.S.S.R., has provided for the rapid industrialization of the border regions. Nowadays the national republics not only produce cereals and cotton; they also have heavy and light industries.

During the period of the two Five-Year Plans important new textile districts have been created in Central Asia, Siberia and Transcaucasia. A huge textile mill has been built in Tashkent, a mixed woollen mill in Barnaul, a large shoe factory in Novosibirsk and a number of glass works in Byelorussia and the Donetz Basin. Large textile mills have been built in Leninakan, Tbilisi, Kirovobad,

Ferghana and elsewhere, and others are in course of construction.

Soviet light industry is striding rapidly ahead. Its gross output (calculated in 1926-7 prices) rose from 3,235 million rubles in 1913 to 18,152 million rubles in 1937—an increase of over 460 per cent. The number of workers employed in the light industries grew in the same period from 794,900 to 1,887,000. Among the new workers, engineers and technicians there are tens of thousands of men and women belonging to the non-Russian nationalities of the U.S.S.R. to whom machine industry was practically unknown in tsarist days.

Labour productivity is steadily rising. Whereas in 1913 the value of the average output per worker in light industry was 4,070 rubles, in 1937 it was 9,690 rubles, this increase of over 130 per cent. being achieved even though the working day has been reduced from ten or eleven hours in tsarist times to seven hours today.

Cotton is the oldest and biggest of the light industries. In 1913 the total output of all the cotton mills in the country was 2,410 million yds.; by 1938 it had risen to 3,787 million yds. The cotton industry employs 583,200 workers, 67 per cent. of whom are women.

The linen industry increased its output from 130 million yds. in 1913 to 295 million yds. in 1938.

In 1913 tsarist Russia produced 8,300,000 pairs of factory-made shoes; the output in the Soviet Union in 1938 was 189,500,000 pairs, or nearly 23 times as much. In 1938, three of the largest Soviet shoe factories—the Skorokhod Factory in Leningrad, the Paris Commune Factory in Moscow and the Mikoyan Factory in Rostov-on-Don—alone produced 39,400,000 pairs, or nearly five times the total output of all the shoe factories in tsarist Russia in 1913.

The output of factory-made knitted goods and of clothing has also increased immensely.

A big industry has been built up for the primary treatment of hemp and flax. The production of cottonine and rayon has also made immense strides.

The output of leather substitutes has increased more than eighteen times during the last seven years (1931 to 1938). Natural rubber as a leather substitute is now entirely replaced by synthetic rubber. The Soviet Union formerly had no home supply of natural rubber, but it has made up this deficiency by building a big synthetic rubber industry, thus ensuring itself a sufficient supply of this important product. In addition, the cultivation of rubber-bearing plants is being developed on an extensive scale.

The rapid expansion of the sources of raw material for the light industries is strikingly shown in the case of cotton growing. In tsarist times cotton was grown only in the Central Asiatic part of Russia. Now it has been introduced in Kazakhstan, Transcaucasia, the Ukraine and other southern districts, including some parts of the R.S.F.S.R.—for instance, the Krasnodar Territory, the Crimean Republic, the Daghestan Republic, and the Stalingrad Region. The gross cotton crop in the U.S.S.R. in 1938 was 2,690,000 tons, as against 740,000 tons in 1913. In the U.S.S.R. cotton is cultivated farther north than in any other country, the plantations reaching the 48th parallel. The Soviet textile industry is no longer dependent on imported raw material and uses exclusively home-grown cotton.

No middlemen stand between the cotton-growers, organized in their collective farms, and the industry, which is state owned: the crop is sold directly to the government.

Hundreds of cotton-growing collective farms each had an income of over a million rubles in 1938. In the Izbakent District, Uzbekistan, alone there are fifty of these millionaire collective farms; between them they earned 83,500,000 rubles with their cotton crop, of which 40,000,000 rubles consisted of government bonuses for deliveries over and above the plan and for extra grade cotton. Fifty cotton-growing collective farms in the Andizhan District, Uzbekistan, also made incomes of over a million rubles each, as did forty collective farms in Armenia. Notable is the Stalin Collective Farm in the Yangi-Kurgan District, Uzbekistan, which delivered 1.62 tons of Egyptian cotton

from every acre of its plantation, receiving over 3,000,000 rubles in bonuses alone.

In the Voroshilov Collective Farm (Kasum-Izmailovo District, Azerbaijan), two teams, headed by Kurbanova and Nerimova, obtained a crop of 6.1 tons of cotton from every acre of land. Agja Alieva, a team leader in the Dimitrov Collective Farm, Kirovobad District, and a member of the Supreme Soviet of the Azerbaijan Republic, picked 42.6 tons of cotton from an area of 7.4 acres. Her year's earnings were 10,000 rubles in cash, in addition to produce.

The technical re-equipment of the Soviet factories demanded workers of higher knowledge and qualifications. The Soviet Government established a minimum standard of technical knowledge required of all workers, varying with the different professions and trades, and set up an extensive system of educational and training courses to impart this knowledge and professional skill. In 1937, 188,500 people employed in the light industries attended spare-time technical minimum courses conducted at the expense of the state, and in that year 301,000 workers passed the state technical examinations in their various trades and professions. In addition, the factories offer their workers extensive facilities for a higher technical training—schools for foremen, assistant foremen and Stakhanovites.

In tsarist Russia there were very few engineers in factories that now come under the category of light industries. Women engineers were entirely unknown. Today the situation is totally different. In 1937, four branches of light industry alone—cotton, linen, leather and shoes, and furs—employed 35,300 engineers, of whom 7,700 were women. In 1937, in the cotton textile industry of the Ivanovo Region, two women were in charge of trusts, three were directors and twelve assistant directors of large mills, 12 were shop superintendents, 53 engineers, 193 junior engineers, and 110 forewomen. Most of these women had been ordinary workers and had been promoted as shock-workers and Stakhanovites.

The spread of the Stakhanov movement has led to a big increase in labour productivity. In the light industries this movement was initiated by two girls, weavers in the Nogin Mill in Vichuga—Evdokia Vinogradova and her namesake, Maria Vinogradova. These girls, having made a thorough study of the technical side of their jobs, were the first in the Soviet Union to operate 100 automatic looms at a time. A little later they each began to operate 140 looms, then 216, and in 1938 as many as 285 looms.

After the Vinogradovas had made their record, the Stakhanov movement spread far and wide in the light industries, where hundreds of men and women have been granted distinctions by the government for their Stakhanovite work. The Soviet people have shown their regard and esteem for their outstanding workers by electing many of them members of their highest legislative bodies. Evdokia Vinogradova is a member of the Supreme Soviet of the U.S.S.R. and Maria Vinogradova of the Supreme Soviet of the R.S.F.S.R. Claudia Sakharova, a Stakhanovite weaver, is the youngest member of the Supreme Soviet of the U.S.S.R. She was only nineteen at the time of her election, and was assistant director of a mill with over 11,000 employees.

Another member of the supreme legislature of the U.S.S.R. is a weaver by the name of Gonobobleva, a woman of fifty, who before the revolution was semi-literate. In 1936-7 she became an outstanding Stakhanovite by establishing a new record in labour productivity, operating 30 non-automatic looms simultaneously. Gonobobleva is now director of the Kirov Mill, Ivanovo.

Maijura Abdurakhmanova is an Uzbek. She is only twenty. She saw a machine for the first time in her life in 1934, at the training school of the Stalin Textile Mills, then in course of construction in Tashkent. In 1935 she began work as a spinner. Within a month she was already operating two ring spinning machines at a time, a month later three, then four, and finally five. She has been elected to the Supreme Soviet of the U.S.S.R. and is now studying



at the Industrial Academy, training to become a mill manager.

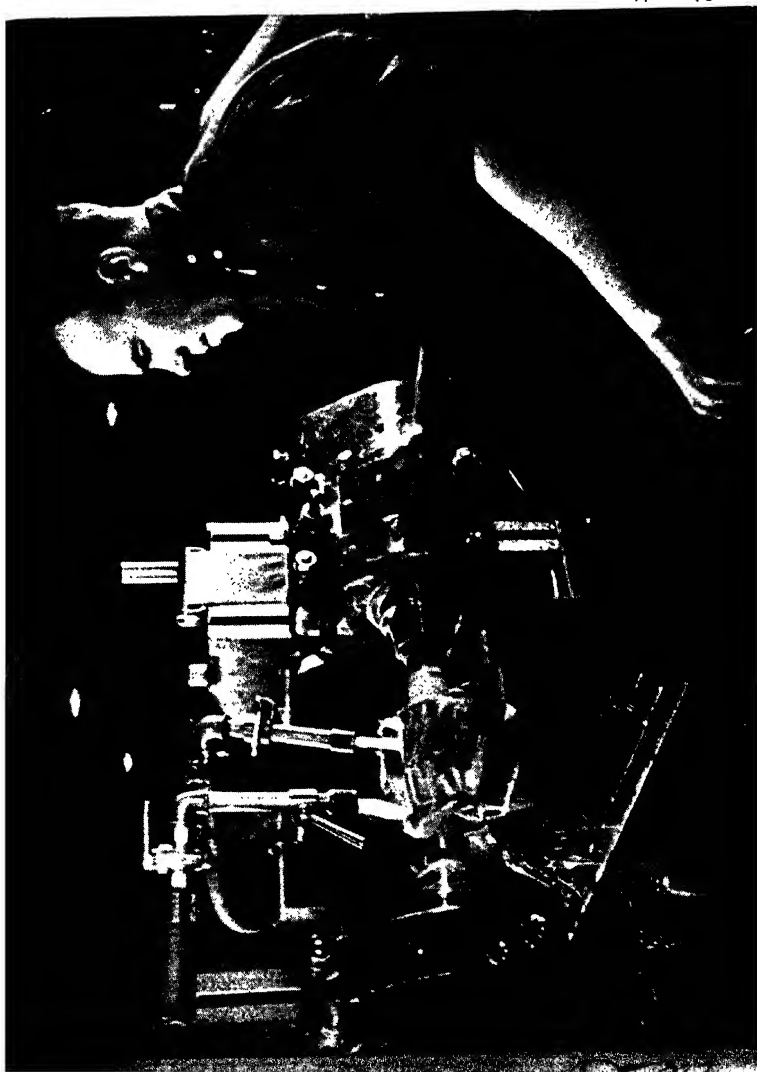
The initiators of the Stakhanov movement in the shoe industry were Smetanin, a worker in the Skorokhod Factory, Leningrad; Yashin, a worker in the Paris Commune Factory, Moscow; and Gomulko, a worker in a Kiev shoe factory. Nikolai Smetanin, who not so long ago was a last-ing machine operator in the Skorokhod Factory, having made a thorough study of his machine, began to last 2,200 pairs of shoes in his 7-hour shift, which was over three times the standard rate of 700 pairs per shift. Smetanin showed his ability not only in his trade, but also as an organizer and manager of production. He was soon appointed assistant director and then director of the Skorokhod Factory—the largest shoe factory in the country, which produces as much as 85,000 pairs daily. Now he is Assistant People's Commissar of Light Industry of the U.S.S.R., and is also a member of the Supreme Soviet of the U.S.S.R.<sup>1</sup>

In 1938 the volume of state, co-operative and collective farm retail trade reached 162,973,500,000 rubles, as against 61,289,200,000 rubles in 1933. The sales of high-grade goods have increased considerably. The sales of cotton fabrics by the state and co-operative stores amounted to 5,500 million rubles in 1937, as against 2,100 million rubles in 1929—a 160 per cent increase; clothing sales totalled 6,600 million rubles—a 90 per cent increase; knitted goods sales totalled 2,300 million rubles—a 130 per cent increase; and sales of footwear, 4,100 million rubles, an increase of 170 per cent.

This increase in the volume of trade is to be attributed to the rising standard of living of the population. In the U.S.S.R. unemployment has been totally eliminated. The average number of employed persons per family has sharply increased, which means a corresponding increase in the average family income. At the same time the average wages of workers in the cotton industry increased,

<sup>1</sup> The article on *Who Directs Soviet Industry* in this volume is contributed by Smetanin.

I. GUDOV, MILL-  
ING MACHINE  
OPERATOR  
Author of the Arti-  
cle on Work & Wages



MAGNITOGORSK  
Blast Furnaces



between 1928 and 1938, by 309 per cent, in the linen industry by 373 per cent, in the wool industry by 260 per cent, in the silk industry by 261 per cent, in the knitted goods industry by 207 per cent, in the leather and shoe industry by 200 per cent, and in the glass-ware industry by 288 per cent. The average monthly earnings of many shock workers and Stakhanovites are as much as 1,000 rubles and over.

To the real earnings of Soviet workers must be added the state expenditure for the education of their children, for the workers' recreation and vacations, for cultural services, medical services, security in old age, and so on. These services rendered by the state free of charge amount on the average to about 22 per cent of the income of the worker's family.

Mention should also be made of the social insurance funds, which are controlled by the trade unions. In 1938 insurance benefits paid by the Moscow and Leningrad Cotton Workers' Union amounted to 108,600,000 rubles. Of this sum 34,500,000 rubles were spent on payment of sick benefits; 28,300,000 rubles were paid to women employees in maternity benefits and 4,350,000 rubles for the acquisition of layettes and as nursing grants; 3,150,000 rubles were spent on extra-school services for workers' children, 2,500,000 rubles on grants to parents, 5,850,000 rubles on the construction and upkeep of Young Pioneer camps and children's sanatoria, 2,450,000 rubles on dietetic feeding, 10,440,000 rubles on rest homes, sanatoria and health resorts, 1,080,000 rubles on facilities for sports, mountain climbing, etc., and 5,300,000 rubles on invalid pensions.

In tsarist times the Russian peasants, because of their poverty, bought very little manufactured goods. Their clothes and linen were home spun on primitive looms and home made. Leather shoes were considered a luxury; most of the peasants wore bast shoes, wrapping their legs in strips of coarse linen kept in place by string. Socks and stockings were practically unknown in the Russian village.

Nowadays the peasants have become collective farmers

and the majority of them dress in the town fashion. The younger people even dress smartly; country girls are buying good shoes, stockings and stylish dresses.

The rising standard of living of the people of the U.S.S.R. is creating a growing demand for manufactured goods, and, in spite of the big increase in the production of fabrics, footwear and knitted goods, the output does not yet cover the demand.

Under the Third Five-Year Plan, the output of various consumers' goods is to be increased 50 to 100 per cent. The year 1942 will see an output of 5,341 million yds. of cotton fabrics (42 per cent more than in 1937), and 235 million pairs of leather shoes (43 per cent more than in 1937). The output of woollen cloth will be 67 per cent more than in 1937. There will be a big increase in the output of textile machinery. The mills will be equipped with the most up-to-date machinery, including continuous process machines, automatic looms, etc.

Further progress is envisaged in the Third Five-Year Plan with respect to bringing the light industries closer to the sources of raw material and fuel. A number of new textile mills will be started, including cotton mills in Barnaul, Novosibirsk and the Kuznetsk Basin, a spinning mill in Leninakan, the second section of the Tashkent Textile Mills, and cloth mills in Kiev and Semipalatinsk. A number of textile mills will be erected in Western Siberia and the Kazakh Republic. Numbers of knitted goods and hosiery factories, silk mills, flax mills, tanneries and shoe factories will also be built throughout the country.

• The Third Five-Year Plan will bring about a further rise in the standard of living of the people of the U.S.S.R. by more fully meeting the demand for all kinds of goods and produce and for wider material and cultural services.

## INDUSTRIAL PROGRESS IN THE SOVIET REPUBLICS OF THE NON-RUSSIAN NATIONALITIES

*By M. Papyan*

VICE-PRESIDENT OF THE PRESIDIUM OF THE SUPREME SOVIET  
OF THE U.S.S.R. CHAIRMAN OF THE SUPREME SOVIET OF THE  
ARMENIAN SOVIET SOCIALIST REPUBLIC

**M**ORE than three-quarters of the entire industry of tsarist Russia was concentrated in its central provinces, in the Ukraine and in the Baku oil district. The non-Russian borderlands of the empire were looked upon by Russian and foreign capitalists alike as nothing more than sources of raw material and markets for the sale of manufactured goods.

When it came into power, the Soviet Government abolished the regime of national oppression and established the equality of all nationalities. To give effect to this national policy, it had to put an end, in the shortest possible time, to the economic and cultural backwardness of the nationalities formerly oppressed by tsarism. Accordingly, the Communist Party and the Soviet Government designed and enacted a series of measures which enabled the districts inhabited by the backward nationalities to overtake the more developed central regions of Russia.<sup>1</sup>

Many industrialization measures were included. During the first two Five-Year Plan periods (1928-37) the former "borderlands" of the country witnessed the construction of numerous industrial establishments and the growth of large forces of workers and professional people of native stock. Without all this, national equality would be but a sham, an empty, meaningless phrase.

The republics of the non-Russian nationalities comprised in the U.S.S.R. have fundamentally reorganized

<sup>1</sup> The most comprehensive and authoritative study of the Communist approach to these problems is to be found in *Marxism and the National and Colonial Question*, by Joseph Stalin. (Lawrence & Wishart, Ltd., 3s. 6d. net.)

their national economy and have attained gigantic industrial expansion. From agrarian adjuncts serving as raw material bases for the industries of Russia proper, they have been turned into mighty centres of Socialist industry. Vital centres of the iron and steel, coal, oil, machine-building and electric power industries have sprung up in the Soviet East.

There is no republic or region of a non-Russian nationality in the U.S.S.R. that has not founded its own industry during the last ten years. This is equally true of both the large and the small republics and regions.

Let us, for example, consider the Bashkirian Autonomous Soviet Socialist Republic, whose dimensions are relatively small. The funds invested in the national economy of Bashkiria in 1932 alone equalled the total sum invested in this region by tsarist Russia in half a century. During the Second Five-Year Plan period (1933-7) capital investments in the national economy of this republic exceeded 1,000 million rubles. Bashkiria, which before the Revolution had practically no industrial enterprises at all, has now built up scores of new factories, including the well-known Ufa Motor Works and an oil-cracking plant. The Beloretsk and Baimak Works have been totally reconstructed and transformed into modern enterprises. This republic has also been found to contain oil, and the Ishimbai and Tuimazy oil fields are already being successfully operated.

Let us now turn to another republic—Kazakhstan—one of the eleven constituent republics of the Soviet Union. This is a vast country, occupying a territory of 1,060,000 sq. miles, exceedingly rich in valuable minerals. It includes the huge Emba oil fields, second in size to the Baku fields. Its copper deposits constitute 60 per cent, and nickel deposits 50 per cent of the total known deposits in the U.S.S.R. Kazakhstan also has huge coal deposits. Recent prospecting revealed immense phosphorite deposits and new chromite beds. They are among the richest in the world. The metal content of the Altai gold, silver, zinc and copper ores is of the highest.

Yet, until the Revolution, all these riches lay buried in the ground untouched. Kazakhstan was a backward region whose nomad population engaged almost exclusively in rather primitive cattle breeding. Meat and leather were the sole products they provided for Russia's central regions. There were no industrial enterprises of any account, no railways and no telegraph or telephone service.

Today the Kazakh Soviet Socialist Republic represents a land of new constructions. A large coal industry has been created here with Karaganda as its centre. Numerous oil fields are being exploited, the erection of the gigantic Balkhash copper smelting works has been completed, the Ridder Lead Works has been entirely reconstructed, and a huge lead factory, the giant of the Soviet Union's lead industry, has been erected at Chimkent, while several new chemical and other works have been added to the republic's industrial plant.

The tempestuous rate of development of the republic's industries may be judged by the fact that during the years of the Second Five-Year Plan lead smelting in Kazakhstan increased twelve-fold and in 1937 constituted 75.3 per cent of the total lead smelted in the Soviet Union, as against 30.2 per cent in 1932.

A roadless country in the past, Kazakhstan under Soviet rule has been covered with a whole network of overland communication lines, including numerous railways whose mileage totals 4,160 miles, while 3,700 miles of waterways have been made available for navigation.

Bordering on Kazakhstan is Uzbekistan, one of the Soviet Socialist Republics situated in Central Asia. In the past, this republic, like all the other borderlands inhabited by non-Russian peoples, was a tsarist colony. It supplied the central regions of the empire with cotton, which the tsarist authorities did not allow to be woven or even spun in the regions which produced it. Today, Uzbekistan has a number of big textile mills. Special mention must be made of the huge plant in Tashkent, the republic's capital, which is equipped with 112,000



spindles and 3,246 looms. A second section of this plant is now under construction, upon completion of which the plant will have in operation 211,000 spindles and 6,952 looms. Many electric power stations, plants manufacturing agricultural machinery and implements, silk reeling mills, clothing factories and other industrial establishments have also been built in Uzbekistan. Not far from Tashkent, on the banks of the Chirchik River, a combined plant producing electricity and chemical products is now under construction. It consists of a hydro-electric power station with a capacity of 270,000 kilowatts, which will supply cheap energy to the industrial establishments of Tashkent, and of a fertilizer factory whose products will go to enrich the republic's cotton fields.

The industrial development of Uzbekistan has led to a considerable increase in the number of the republic's native workers and professionals. Over 100,000 people are now employed in its large-scale industries and on construction. More than half of these are skilled and semi-skilled Uzbek workers. An Uzbek technical intelligentsia—technicians and engineers—has also come into existence.

Similar records of achievements are shown by the other non-Russian nationalities of the U.S.S.R. Industry is rapidly expanding not only in those republics which formerly were agrarian colonies pure and simple, but also in Azerbaijan and the Ukraine, which even before the Revolution had a number of industrial establishments.

In Azerbaijan, the old Baku oil industry, dating back to pre-revolutionary days, has been entirely reorganized. As a result, the annual oil yield has increased 3 times in comparison with 1913, the gas yield 69 times and the production of gasoline 48 times. In recent years a number of new oil fields have been prospected and are now extensively exploited. In 1938 the new fields and the new wells on the old fields accounted for 83 per cent of the total oil output.

The Donetsk coal basin, the chief purveyor of coal for the whole country before the Revolution, is located in the Ukraine. Now, with the development of the Kuznetsk

coal fields in Siberia, the Karaganda coal fields in Kazakhstan and local coal fields in Central Asia, Georgia, the Far East and in other districts, the Donetz basin's proportionate share in the Soviet Union's output of coal has, naturally, diminished. However, as far as absolute figures go, the mining of coal in the Donetz basin is increasing from year to year and has more than tripled in comparison with pre-war times. Today, the Ukrainian Soviet Socialist Republic produces twice as much coal as all of Poland.

The Ukraine also had an iron and steel-industry before the Revolution. This, too, has been thoroughly reconstructed during the years of Soviet rule. In place of the old blast and open-hearth furnaces and of the old rolling mills, new, thoroughly modernized equipment has been installed. Many first-class new works, such as the Zaporozhye Steel Mill, the Azov Steel Mill, the Krivoi Rog plant and others, have been erected. During the years of the Second Five-Year Plan alone (1933-7), the Ukraine's output of pig iron was more than doubled. One plant—the Kirov iron and steel mill in Makeyevka—produces twice as much pig iron as all the iron and steel mills in Poland put together. During this same period the production of steel in the Ukraine almost tripled. Ukrainian mills produce as much steel annually as Japan, Italy and Poland put together. In comparison with 1913, the machine-building industry of the Ukraine has grown thirty-fold and the generation of electric power 18 5-fold. The Lenin Hydro-Electric Power Station on the Dnieper, built under Soviet rule, alone supplies more electric power than did all the power houses of tsarist Russia in the aggregate.

The author of these lines is an Armenian, and it is therefore only natural that he should want to illustrate the industrial expansion in the republics of the non-Russian nationalities by the example of Armenia.

Until 1914 the industry of Armenia, in the main an agrarian country, was extremely backward and even primitive. Its few factories were hardly more than handi-

craft shops. Most developed at that time were the copper industry, the production of alcoholic beverages, and cotton ginning by handicraft methods. The inexhaustible natural resources of this mountainous country, with its rivers and lakes and its colossal reserves of valuable minerals, were practically unexploited. All the electric power in Armenia used to be supplied by two hydro-electric power stations with a total capacity of 250 kilowatts.

During the World War (1914-18) and the years in which the Armenian counter-revolutionary Party of the Dashnaks was in power (1918-20), Armenia's weak industry was altogether ruined. Only Soviet rule, established in Armenia on November 29, 1920, put an end to its economic prostration. The initial period of economic revival has been followed by the Socialist industrialization of its national economy.

A number of hydro-electric power stations, with an aggregate annual output of 350 million kilowatt-hours, have been built. All these power houses are linked up into a single chain, which makes it possible to regulate the flow of electric power. Extensive work is now under way to utilize the abundant waters of the huge Sevan Lake, situated high in the mountains, for which purpose a number of hydro-electric power stations are being erected on the cascade system along the Zanga River. When construction of the cascade is completed, leaving the lake and its innumerable fisheries intact, Armenia will annually be supplied with more than 3,000 million kilowatt-hours of cheap electric power. At the same time the water discharged by the turbines will go to irrigate more than 321,000 acres of fertile soil.

Construction of power plants has made possible the extensive development of industry. New branches of industry have been launched, and the old branches have been fundamentally reconstructed. Armenia's copper industry has made big strides. At present the annual output of the Alaverd and Kafan copper smelting works amounts to 10,000 tons.

The republic also have large chemical works. In Erevan, the capital of Armenia, a huge synthetic rubber works has been erected. Some time ago a new cement factory, producing 114,000 tons of high-quality material annually, sprang up on the Davalin sands, at the foot of a long range of mountains rich in limestone.

A machine-building plant manufacturing engines and compressors is another addition to the Republic's industries. A new tobacco factory manufactures 1,700 million cigarettes a year. Armenia's canneries yearly put out 20 million cans of preserved fruits and vegetables. The output of wine presses and distilleries, meat packing plants and other establishments of the food industry has also increased to a marked extent.

Two cotton ginneries have been built to deal with the rich cotton crops. Their capacity is 22,000 tons of cotton annually. A huge textile plant, with large new spinning and weaving mills, forms the nucleus of a regular little town of its own within the city of Leninakan. This plant has 117,000 spindles and produces 33 million yards of textiles a year. The leather and shoe industry has also undergone considerable development.

Erevan, which only recently used to amaze the foreign tourist by its winding, typically Asiatic streets and clay hovels, has been transformed into a beautiful, well-planned city well deserving its position as capital.

Under capitalist conditions nations required whole centuries to attain to modern modes of production, but with the impetus given them by the October Socialist Revolution, our formerly backward nations needed little more than a decade to develop into flourishing Socialist republics, where exploitation of man by man and national oppression have been wiped out once and for all, where advanced Socialist industry and large-scale Socialist agriculture hold undivided sway.

## WORK AND WAGES IN THE SOVIET UNION

*By I. Gudov*

ORDER OF LENIN. MEMBER OF THE SUPREME SOVIET OF THE  
U.S.S.R. METAL WORKER

**T**HERE are today twenty-eight million workers by hand and brain in the U.S.S.R., or two and a half times as many as there were in Russia in tsarist times.

All these people are employed by the state. How are they faring? The Great October Socialist Revolution brought them not only freedom, but tangible material benefits as well. With the growing wealth of the country, the well-being of the working population is steadily rising. In the U.S.S.R. the whole national income belongs to the people and is used for the benefit of the people. In tsarist Russia three quarters of the national income passed into the pockets of the tsar, the landlords and the capitalists.

But there has been a change not only in the distribution but also in the size of the national income of the U.S.S.R. which in 1938 was five times as large as that of tsarist Russia in 1913.

In the U.S.S.R. the principle of Socialism is applied: from each according to his ability, to each according to the labour he performs. The Soviet people—the workers, peasants and intellectuals—work for themselves, for their own benefit, and they therefore strive to give their best efforts to the state. This national endeavour coincides with the personal interest of the citizen, for he is remunerated in accordance with the amount and quality of the work he performs.

If, in addition to this, we bear in mind that a technical revolution has taken place in Soviet economic life, that in the use of modern machinery in industry and agriculture the Soviet Union is more advanced than any other country in the world, and that millions of people have

learnt to master the new machine technique, the rapid rise of productivity of labour in the U.S.S.R. will be understood.

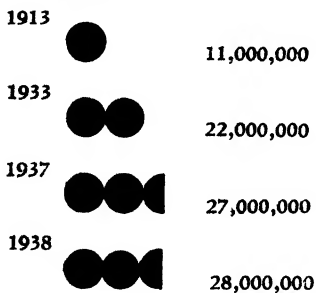
Here are a few figures in illustration: during the period of the First Five-Year Plan (1928-32), productivity of labour in industry increased 41 per cent; in the period of the Second Five-Year Plan (1933-37), it increased 82 per cent (as against 63 per cent envisaged by the plan) in large-scale industry, and by 83 per cent (as against 75 per cent envisaged by the plan) in the building industry. Productivity of labour in heavy industry in the first half of 1938 increased by a further 15.5 per cent compared with the corresponding period of 1937. It is increasing at a faster rate in the Soviet Union than in any other country in the world. By the end of the period of the Second Five-Year Plan it was already higher than in Great Britain, and is close to being the highest in Europe, although still lower than in the U.S.A.

One of the most important aims envisaged in the Third Five-Year Plan (1938-42) is a further rise of productivity of labour by 65 per cent in the manufacturing industries, and by 75 per cent in the building industry.

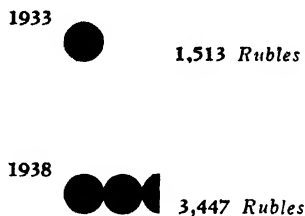
Numerous cases may be cited of individual Stakhanovites and whole groups of Stakhanovites who have broken world records in productivity of labour, and who are surpassing the old, supposedly maximum standards of output of machinery. They are thereby solving the problem of the all-round mechanization of labour. They are discovering new methods of production. They are creating a Socialist culture in industry.

In addition to being highly productive, the work of the Stakhanovites is also of high quality. And one of the most important features of this movement is that Stakhanovites not only show a high productivity of labour, but, having mastered up-to-date machine technique, are proving themselves to be organizers of production, initiators of perfected methods and processes. Thus showing that the workers of the Soviet Union are attaining to the cultural and technical level of engineers and technicians.

### TOTAL NUMBER OF EMPLOYED PERSONS



### AVERAGE YEARLY WAGE of INDUSTRIAL WORKERS



### LABOUR PRODUCTIVITY (Industry)

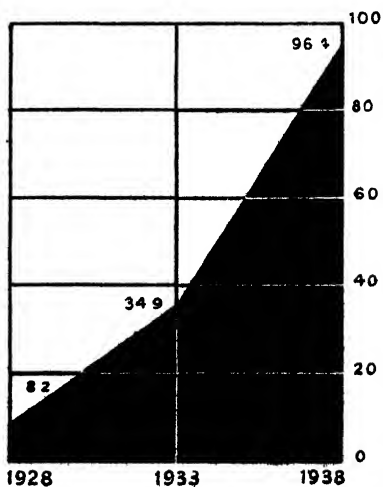
Increase during First  
Five-Year Plan  
Period  
1928-32



Increase during  
Second Five Year  
Plan Period  
1933-37



### NATIONAL PAYROLL (Billions of Rubles)



My own case is an example. I am a metal worker. Operating a German milling machine, I attained an output over fourteen times the established German standard for that machine. How? Instead of operating one cutting tool and milling one part at a time, I fitted the machine with two cutting tools and began to work two parts simultaneously. Then I increased the number of tools and the number of parts worked correspondingly. Hence the result. But in order to achieve this result I had to perform work in adapting the machine which rightly comes within the province of a designing engineer.

Or take the case of Zamkov. He operated a German bending machine which is calculated to bend iron rods at the rate of 4,585 lb per shift. He decided to make some improvements to the machine: he attached a fast motor to it, fitted a contrivance of rollers to feed and guide the rods, and exchanged the hand control for a foot control. He also rearranged the work of his helpers. As a result, he first exceeded the German standard of output per shift ten times, and then twenty-five times. As we see, in order to multiply the German standards of output in this way, Stakhanovite Zamkov had to make constructive improvements which are usually regarded as coming within the field of the designing engineer.

But let us return to our figures. It should be borne in mind that every rise in productivity of labour in the U.S.S.R. by 1 per cent implies a rise in the total annual output of the country's industry and, what is more, that this rise itself increases from year to year. Thus every rise in productivity of labour by one per cent in the period of the First Five-Year Plan meant an increase of total industrial output by roughly 250 million rubles, and in the period of the Second Five-Year Plan by over 430 million rubles. In the period of the Third Five-Year Plan every one per cent increase in productivity of labour will increase the total output of manufactured goods by over 950 million rubles.

During the last five years industrial output in the Soviet Union increased by 139 per cent, a rate of industrial



progress unknown to any other country in the world. Compared with pre-war times, industrial output in 1938 had increased by over nine times in the U.S.S.R., whereas in the major capitalist countries (U.S.A., Great Britain, Germany and France) it had either remained at the level of 1913 or else exceeded it by only 20 or 30 per cent.

The rising productivity of labour, the growing output of industry, the progress of the national economy as a whole and the accompanying increase in the national income, all lead to a steady improvement in the material and cultural standards of the Soviet people. Wages are rising from year to year. The national payroll has increased nearly twelve times in the past ten years: in 1928 it amounted to 8,200 million rubles, in 1933 to 34,900 million rubles, and in 1938 to 96,400 million rubles.<sup>1</sup> The average annual earnings of the industrial worker rose from 1,513 rubles in 1933 to 3,447 rubles in 1938.

But the standard of living of the Soviet manual and intellectual worker is measured not only by the steady increase in the national payroll, but also by the rise in real wages. This was pointed out by V. Molotov, the head of the Soviet Government, at the Eighteenth Congress of the Communist Party of the Soviet Union, when, referring to the considerable improvement in the material and cultural standard of the working people and to the increased national consumption in the period of the Second Five-Year Plan (1933-37), he said: "While there was an 18 per cent increase in the number of workers and employees, the national payroll showed a 2½-fold increase, or a rise of 151 per cent, as against 55 per cent specified in the Second Five-Year Plan. Real wages of workers doubled during the Second Five-Year Plan (a 101 per cent increase)."

One indication of the rise in the standard of living is the big expansion of retail trade. During the period of the Second Five-Year Plan the sales of the state and co-operative trading system increased more than two and a half

<sup>1</sup> These figures are brought up to date in *Voznesensky's Report* (1941) printed on pp. 21-55 of this volume.

times. This is due both to the growing food resources of the country and to the tremendous increase in the output of consumers' goods. It is a characteristic fact that in the period 1935-37 the consumption of black (rye) bread considerably declined, whereas the consumption of white (wheat) bread increased  $2\frac{1}{2}$  times. Even greater was the increase in the per capita consumption of meat and meat products. The per capita consumption of eggs and fruit doubled during this period, and the per capita consumption of butter more than doubled.

In 1938 the output of the food industry of the U.S.S.R. was nearly six times as large as the output of the food industry in Russia in 1913. These food products now almost entirely remain within the country to be consumed by the population.

The increase in the output of industrial goods may be illustrated by the fact that 8,300,000 pairs of boots and shoes were turned out by the factories of Russia in 1913, while 189,500,000 pairs were turned out by the Soviet factories in 1938. The increase is even more striking in the case of the garment industry, whose output, valued at 1926-27 prices, increased from 13,500,000 rubles in 1913 to 1,699 million rubles in 1938.

There is a steady increase in the demand for the higher grades of goods at the expense of the lower grades. In particular, there is a growing demand for good furniture and other domestic articles. But in spite of this great increase in the output of consumers' goods, we find that owing to the rising standard of living and the increasing purchasing power of the working population, the demand grows faster than the supply, and it is still not fully satisfied.

To get a correct idea of the standard of living of the workers, it should be borne in mind that there is scarcely a family where there are not two, three or more working members who contribute to the family income. There is a great demand for labour power in the Soviet Union, and nearly every factory or office is constantly seeking additional workers.

But the standard of living of the workers is measured not only in wages. Both the state and the trade unions provide an extensive system of free services. Compulsory insurance of workers at the expense of the state is universal. With the progress of industry, the number of employed persons increases, and so does the budget of the social insurance fund. The number of insured persons increased from 11 million in 1929 to 26,700,000 in 1937. Insurance covers sickness, permanent disability, old age and death. The total expenditure of the state on social insurance amounted to over 10,000 million rubles in the period of the First Five-Year Plan, and to 26,500 million rubles in the first four years of the Second Five-Year Plan. It should further be borne in mind that medical service in the Soviet Union is free, and that all working people receive an annual vacation with full pay at the expense of the state. The trade unions have their rest homes and sanatoria where workers may spend their vacations. The expenditure of the trade unions under this head amounted to 900 million rubles in 1936 and exceeded 1,000 million rubles in 1937. In the latter year the trade unions provided places in rest homes and sanatoria for about three million persons, or nearly 400,000 more than in the previous year. To this should be added that education in the Soviet Union—from elementary school to university—is free, that the state spends vast sums annually on cultural services for the working people, and so on. These additional expenditures of the state, over and above the monetary earnings of the workers, represent of course an addition to real wages.

Particular care and solicitude is shown in the U.S.S.R. for the working woman. Maternity benefits granted by the state in 1937 amounted to 1,145 million rubles. In addition, there are the special grants made by law to mothers of large families. The expenditure of the state in 1937 on maternity homes was 488 million rubles, on lying-in centres in rural districts over 90 million rubles, on dairy kitchens over 1,000 million rubles, and on the building and maintenance of crèches over 1,000 million

rubles. Extremely favourable conditions have been created both for the welfare of the mother and for the health and upbringing of her children.

Such, in brief, is the position with regard to the work, wages and welfare of the working people of the Soviet Union.

## WHO DIRECTS SOVIET INDUSTRY

*By N. Smetann*

ORDER OF LENIN. ASSISTANT PEOPLE'S COMMISSAR OF LIGHT  
INDUSTRY OF THE U.S.S.R. MEMBER OF THE SUPREME  
SOVIET OF THE U.S.S.R.

**T**HE industrial development of the U.S.S.R. calls for increasing numbers of administrators with a good knowledge of the processes of production and the ability to direct them.

During recent years Soviet industry has grown considerably, and its aggregate output is now second only to that of America. Many new branches of production, unknown to Russia in tsarist times, have sprung up in the last ten years; such are the chemical, aircraft, automobile, tractor and machine tool industries, to mention only a few.

How was it possible to train the necessary people to direct these thousands of new plants? Where did they come from? What manner of people are they?

The Great October Socialist Revolution abolished exploitation in the Soviet Union. The workers, peasants and labouring folk generally became the masters of all the wealth of the country. Tens of millions of people who before the revolution were unfranchised and downtrodden came to take an active and regular part in the administration of the state. Their ranks have produced many talented organizers and directors of industry, transport, and agriculture, and many gifted workers in the field of art and culture.

The administration of the country and its industry was thrown open to women, who constitute half the population and who in tsarist times were allowed no share whatever in public life. The revolution has conferred upon women equal rights with men in law and in fact. There is no branch of government, industry or cultural effort in the Soviet Union today in which women do not take an active part.

The numerous peoples of the U.S.S.R. who under the tsars languished in a state of colonial slavery have been emancipated from national oppression and, with the assistance of the Russian people, have built up their own industry and a new cultural life. These peoples are also taking an active part in the work of Socialist construction, and their ranks are constantly producing talented leaders.

The vast majority of the directors of Soviet industry were once rank-and-file workers. They secured promotion owing to their abilities and the initiative they displayed in production. They are people reared in the new Socialist technique; they strive to get the very utmost out of technique and to produce the largest possible quantity of goods of the best quality for the benefit of their country.

The national income of the Soviet Union is entirely at the disposal of the working people. Part of it goes for the further economic development of the country, the remainder to satisfy the needs of the people. The richer, therefore, the U.S.S.R. grows, and the more its industry and agriculture produce, the greater becomes the well-being of its citizens and the higher their standard of living. Hence the Soviet citizen is interested in multiplying the wealth of his country, and therefore strives to increase productivity of labour and to raise his own level of education and technical knowledge. In this, of course, he has the assistance and encouragement of the state, which assigns vast sums to educational establishments for the training of skilled forces. Whereas 559 million rubles were assigned from the budget for education in the fiscal year 1925-26, over 20,000 million rubles, or nearly forty times as much, were

assigned in 1938. About one-third of this sum was designed for the training of skilled forces.<sup>1</sup>

Every worker in the Soviet Union has the full opportunity to acquire an education and training equal to that of a technician or engineer, to acquire the knowledge needed for the advancement of industry. This not only applies to capable individuals who succeed in securing advancement; it is being carried out on an extensive scale with the vigorous support of the Soviet state, which has set itself the aim of raising the cultural and technical level of the whole working class of the country to that of engineers and technicians.

Every factory has courses of various kinds at which any unskilled worker who wishes is taught the technical knowledge he needs. The Skorokhod factory, for example, at which the present writer was employed for many years as an ordinary worker, has 17,000 employees, and of these about ten thousand are taking various courses of study.

Workers who desire to improve their qualifications and to obtain a better knowledge of the processes of their industry may attend the Stakhanov technical schools in the factories where they are employed. They also have the opportunity of acquiring a complete technical education. They may attend technical college in their spare time or take a university correspondence course. This enables a worker to acquire the knowledge he needs without having to throw up his work or leave the town where he resides. Nearly all the universities and special technical colleges have their correspondence departments, and the field they embrace is expanding from year to year.

There are a number of academies in the U.S.S.R. where yesterday's rank-and-file workers are trained to be directors of vast industrial plants. By the end of 1936 two-thirds of all the workers engaged in large-scale industry had already been through, or were taking, courses in technical

<sup>1</sup> The pictorial graph on pp. 6 and 7 of this volume shows in a most striking manner the way in which the national budget was apportioned for the year 1941.

training. About 350,000 young workers are being trained at the factory apprenticeship schools; 385,000 entered technical colleges in 1938 alone.

In every Soviet factory the trade union and social organizations, as well as the special personnel department, help the advancement of workers to more responsible posts. They try to secure for them the most favourable conditions for study, whether at the factory itself, or at schools, courses, etc. They help their advancement, and they show a constant interest in the people whose promotion they have furthered.

The absence of a degree or diploma is no bar to promotion. There are plenty of directors of huge industrial plants and superintendents of shops and departments who have not yet finished their education but who have displayed talent in the practical processes or in the organization of industry. Individual tutors, prominent experts and even professors are often assigned to such people to help them to acquire the necessary knowledge in the shortest possible time. In recent years tens of thousands of Stakhanovites have been promoted to various leading posts in all branches of industry. In heavy industry alone some five thousand have been appointed heads of trusts, factories and mines, oilfields and so on.

Izotov and Dyukanov, recently miners at the coal face, are now directors of coal trusts. Krivonoss, Ognyev and Bogdanov, former locomotive engineers, are now administering big railways with a large freight and passenger traffic. Many such examples could be cited. The names of Stakhanovites, people with a high sense of public duty who have mastered the technique of their jobs to perfection, are widely known all over the country. Many of them have been elected to the Supreme Soviets of the U.S.S.R. and the Union Republics. Let us mention Alexei Stakhanov himself, the initiator of the Stakhanov movement, Evdokia and Maria Vinogradova, textile workers, and A. Busygin, forgerman at the Gorky Automobile Works. These are only a few of the long list of rank-and-file workers who in a short period have developed into public

figures who take an active part in affairs of state. The majority of them are studying in the industrial academies of their particular branches of production.

Some idea of the rapidity of advancement and development of new commanders of industry may be obtained from the story of my own life.

I was born the son of an oven-mason, whose earnings were very meagre. Like the majority of workers in tsarist times, my father had no opportunities for education and no chance of transferring to a more skilled and lucrative profession. In pre-revolutionary days, the Russian government showed no interest in educating workers, and a qualified technical training was practically beyond the reach of workers' children. Many educational establishments were only open to the sons of the nobility. Education was expensive (it is free in the U.S.S.R. today), scholarships and stipends were unknown; and so it was extremely difficult for the sons of workers and peasants to get any schooling at all. The promotion of workers to executive posts was something almost unthinkable in the factories of tsarist times. The owners preferred to invite experts from abroad for this purpose. In the Skorokhod shoe factory, for example, all the foremen and shop superintendents were Germans.

I first went to that factory in 1918, after my father died. Shortly after the Revolution an apprenticeship school was opened in connection with the factory, and I joined it with the object of improving my qualifications. After leaving this school I became a laster. This operation used to be performed by hand. After the factory was reconstructed in 1930, it raised its output from two million to twenty-two million pairs a year, and I was put on a lasting machine.

I studied the machine very thoroughly and came to the conclusion that my job could be done much faster without injury to the quality of the product. And by 1932 my output had increased very considerably. In 1935 I read in the newspapers about the methods of work instituted by Alexei Stakhanov, a coal hewer in the Donbas, and the



high productivity of labour he had attained. This gave me the idea that if we in the shoe trade were to adopt Stakhanov's methods, we too could raise our output considerably and supply the country with far more shoes than before. I began to study my machine more carefully, to probe into all its "secrets" and potentialities, and on September 21, 1935, I established a record: I lasted 1,400 pairs of shoes in one shift, when the standard output was 680 pairs.

This was a historic day in my life. The news of my record soon became known all over the factory. I received the congratulations of the workers, who presented me with a huge bouquet of flowers. I saw sincere pleasure depicted on the faces of my workmates. This record started a regular movement for higher productivity of labour in the shoe factories of the country. Calculation of movement and economy of seconds became the watchword among the shoe workers.

Very soon my record was beaten by other workers, I was sincerely pleased with their achievements, for it was all for the benefit of our Soviet country and helped to increase its wealth and might. I continued to strive to improve the processes of work, to raise productivity of labour, and thereby I considerably increased my own earnings. I soon established a new record—1,820 pairs in one shift. It made me happy to know that our people were receiving more shoes than formerly thanks to my efforts and those of my comrades. The government rewarded my initiative and achievements by granting me the Order of Lenin.

Meanwhile, I was studying very persistently and improving my technical knowledge. Very soon I was appointed shop foreman, and a year later assistant director of the factory. In 1938, three hundred thousand voters of Leningrad elected me Member of the Supreme Soviet of the U.S.S.R. In May of that year I was appointed director of the Skorokhod factory, whose gates I had first entered twenty years earlier as a boy of twelve. Today I have been promoted to the highly responsible post of

Assistant People's Commissar of Light Industry of the U.S.S.R.

There are numberless workers like myself in our country who in a short time have passed from the bench to the management of industry. I could mention dozens of my comrades, former rank-and-file workers in the leather and shoe trade who have become directors of factories.

Take, for example, Salamanov, a leather worker, who in his spare time studied assiduously and acquired a higher technical education. He first became an engineer and then the director of a big leather works. Another example is Zatulovsky, who was also a leather worker. He first qualified as a technician and then as an engineer. He is now the assistant chief of the Leather Industry Board of the U.S.S.R.

In a like manner people are developing in every branch of industry of the Soviet Union. These people are part of the wealth of the Soviet country. They are a pledge of the rapid growth of its might and power. They love their country profoundly and are devoted to the service of its industry. They never tire of studying and improving their proficiency in whatever post their people may promote them to. A feature that marks them all is their persistent effort to transmit their knowledge, experience and discoveries to their comrades and to help them in their development and advancement.

The Third Five-Year-Plan of Economic Development of the U.S.S.R. (1938-42) envisages a further big advance in industrial development and in the mechanization of agriculture. This will demand large numbers of new administrators in the most varied fields. The system of training and advancement in the Soviet Union is a guarantee that this demand will be fully met.

## MAGNITOGORSK

*By A. Baikov*

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**The Urals-Kuzbas Problem**

**T**SARIST Russia was an agrarian country with a backward industry. But even that industry was extremely unevenly distributed throughout the country. Textile mills, for instance, were built only in the central districts, far from the sources of raw material. Oil extraction was concentrated almost entirely in Baku, and coal mining in the Donetz Basin (Ukraine). The principal iron and steel plants were concentrated in Southern Ukraine. This was practically the sole coal and iron and steel producing centre of tsarist Russia: it accounted for nearly 90 per cent of the coal mined in the country and about 75 per cent of the pig iron produced.

This uneven distribution of industrial enterprises and their remoteness both from the sources of raw material and from the consuming districts caused heavy losses to the national economy of the country. Naturally, the Soviet Government, which has set itself the aim of developing the productive forces of the country according to a definite plan and along strictly scientific lines, has from the very outset dealt with the question of the rational distribution of industry throughout the country.

Lenin dealt with this problem as early as 1918. It was he also who at that time put forward the idea of building up a new coal and metallurgical base in the east of the U.S.S.R.—what was known as the Urals-Kuzbas problem. The project visualized the creation of a powerful iron and steel industry based on the iron ore deposits of the Southern Urals (principally of Magnitnaya Mountain) and the coal deposits of the Kuznetsk Basin.

This idea was further elaborated and put into practice on the initiative of J. V. Stalin.

Both the iron ore deposits of Magnitnaya Mountain and the coal deposits of the Kuznetsk Basin are extremely rich, and of a very high quality. The distance between them is about 1,250 miles, and, in order to utilize them to the best advantage, it was necessary to build two industrial centres; an iron and steel and ore mining centre in the Southern Urals, and an iron and steel and coal mining centre in Western Siberia.

The vast project was realized during the period of the First Five-Year Plan. An official decision was promulgated by the Soviet Government on January 16, 1929, providing for the construction of the Magnitogorsk Iron and Steel Works on the basis of the previously drawn up plans. On March 10 of the same year work was started on this construction, and on February 1, 1932, pig iron began to flow from blast furnace No. 1 of Magnitogorsk.

Simultaneously with the building of the Magnitogorsk plant, construction was going on on the Kuznetsk Iron and Steel Works which started operation somewhat earlier than the former.

Professor Davis, an American engineer wrote *à propos* the Urals-Kuznetsk project at the time that, according to preliminary data, the iron ore deposits discovered in the Magnitnaya Mountain district in the Southern Urals are the richest in the world. A considerable part of these ores do not even require concentration. Professor Davis pointed out that the Soviet government's plan to combine the exploitation of the Ural ore with that of the Kuznetsk coal, with the construction of two gigantic iron and steel plants at both ends, was one of the boldest and most stupendous projects ever undertaken in the history of the iron and steel industry.

This plan of the Soviet Government, which Professor Davis characterized as a bold and stupendous project, has now materialized. The Magnitogorsk Combine mines iron ore for its own plants and for the Kuznetsk Combine. The Kuznetsk Combine, on the other hand, while

receiving iron ore from Magnitogorsk, supplies the latter with coal mined in the Kuznetsk Basin.

The Magnitogorsk Works consist of a number of plants organized as a single administrative and economic unit with a huge output of iron and steel. The central feature of the Combine is the iron and steel works with blast-furnaces (production of pig iron), a steel smelting plant (production of steel in open hearth furnaces) and rolling mills, as well as a number of auxiliary shops.

Immediately adjoining the iron and steel works are the very rich mines where the iron ore is extracted and worked up. The neighbouring districts abound in deposits of limestone, dolomites, quartzite and fireproof clays. A special coke-chemical plant has been built for the production of coke. The Combine includes also a plant for the production of fire-proof materials (Dinas clay and chamotte) adjoining the iron and steel works.

### *The Supply of Raw Materials*

The principal source of the iron ore is Atach Mountain, one of the four peaks of Magnitnaya Mountain, rising 2,017 feet above sea level. Its western slope is rich in magnetite deposits representing a huge lode amid volcanic rock formations.

The presence of iron ore in Magnitnaya Mountain was known long ago. Ore in small quantities was extracted here as early as 1747. But at that time nobody had a clear idea of the significance of these deposits. The Mountain attracted very little attention. It was situated in a sparsely inhabited steppe region devoid of any forests, and there were no railways. The little ore that was mined was carted by horses to the Byeloretsk Works situated about sixty miles from Magnitnaya Mountain.

Prior to the World War of 1914-18 the output of ore on Magnitnaya Mountain never exceeded 50,000 tons a year. In those times all the Ural industries used only charcoal, and this necessarily limited the output.

All this has changed with the introduction of mineral fuel from the Kuznetsk Basin. The Kuznetsk coals coke

well, have a small ash and sulphur content, and their known deposits reach hundreds of billions of tons. As a result, Magnitnaya Mountain has assumed a tremendous significance.

Thorough geological surveys have established the amount of the ore deposits and their composition. It has been brought to light that Magnitnaya Mountain contains 450 million tons of magnetite ore with an average content of iron amounting to over 60 per cent. Owing to the processes of erosion the top deposits have been largely transformed into easily restorable martite with a small sulphur and phosphorus content. Its average composition is as follows: iron 64.47 per cent, sulphur 0.19 per cent and phosphorus 0.015 per cent. The deeper deposits contain more sulphur and less iron (an average of 58.34 per cent) but their phosphorus content is also small.

One of the largest ore mining enterprises in the world has been built up on the site of these deposits. The mine is well equipped with modern machinery. All the processes of ore extraction are a hundred per cent mechanized. There are also crushing, washing, sorting and agglomeration plants attached to the mine. In the past seven years the mine supplied 30 million tons of ore to the Magnitogorsk and Kuznetsk Iron and Steel Works. At present it supplies annually 6,500,000 tons of ore ready for the blast furnaces. This represents 18 per cent of all the iron ore mined in the U.S.S.R.

In addition to the Magnitnaya Mountain deposits, the Combine has at its disposal the Komarovo-Zigazinsk iron ore, the known deposits of which reach 150 million tons, and manganese ore deposits estimated at 2,600,000 tons.

The districts in the vicinity of the Combine abound in valuable minerals which are used as fluxes and fireproof and building materials. The known deposits of these minerals include:

Limestone	..	..	..	289,000,000	tons
Dolomite	..	..	..	2,700,000	„
Quartzite	..	..	..	6,000,000	„

The known deposits of fireproof clays and moulding sand reach scores of millions of tons. Thus nature has fully provided the Magnitogorsk Iron and Steel Works and all its auxiliary plants with an abundant and uninterrupted supply of all the necessary raw materials for a long time to come.

### *Industrial Plants*

The *Coke-Chemical Plant* consists of four batteries (276 ovens) of the Koppers-Becker system and covers the entire chemical cycle; at the same time it provides an enormous amount of high-caloried gas which is utilized for the open-hearth furnaces and for other purposes. The *Iron and Steel Works* includes four blast furnaces with a volumetric efficiency of 41,670 cu. ft. each. The output per day of each furnace is over 1,000 tons of pig iron. There are ten stationary open-hearth furnaces of 150-ton capacity each and four of 250-ton capacity each with a total hearth area of 9,648 sq. ft. Two more open-hearth furnaces of 350 tons capacity each are now under construction. The plant is equipped with a powerful blooming mill with two continuous billet-mills and six of the most up-to-date automatic merchant mills, including a wire-drawing mill of a design which is unique in the world. Another blooming mill is provided with a continuous billet-mill "720."

The huge Iron and Steel Works has its own:

Central electric power plant;

Steam power department;

Mechanical shop, forge-shop, foundry and repair shop;

Chamotte and Dinas brick plant;

Chemical, electro-technical and thermo-technical laboratories;

Railway, automobile and other transport facilities.

A huge reservoir, formed on the Ural River by the building of two dams, supplies the works with water and feeds the water supply system which has a daily capacity of 132 million gallons of water. The Magnitogorsk Combine covers an area of 27 sq. miles in the valley of the Ural River.

By September 1, 1938, expenditure on the construction of the first section of the Combine amounted to 1,322,500,000 rubles. The Combine employs 26,000 workers, engineers and technicians. In the seven years following the beginning of its operation the Combine produced:

Over 30,000,000 tons of iron ore;

19,500,000 tons of coke;

8,200,000 tons of pig iron;

5,600,000 tons of steel;

4,400,000 tons of rolled steel.

The Iron and Steel Works has been gradually increasing production, while the construction of the Combine has been going on all the time. At present the first section of the Combine is nearly completed. The following figures indicate the nature of its work in 1938:

Output of pig iron—1,796,000 tons;

Co-efficient of volumetric efficiency of blast furnaces—0.90;

Average annual output of pig iron per blast furnace—449,000 tons;

Output of steel—1,580,000 tons.

The output of pig iron at the Magnitogorsk Iron and Steel Works amounts to nearly a half (42 per cent) of the total output of pig iron in tsarist Russia.

### *The Second Section*

When the second section of the Magnitogorsk Combine is completed within the next few years, it will include the following:

A mining enterprise consisting of three powerful crushing plants, a washing and a concentrating plant, an agglomeration plant and a number of auxiliary plants;

A coke-chemical plant with eight batteries (544 ovens) covering a complete chemical cycle;

Eight powerful blast furnaces;

Three steel-smelting shops with 29 stationary open-hearth furnaces (ten of 150 ton capacity and nineteen of 350 ton capacity);



Two blooming mills with continuous billet-mills  
“720,” “630” and “450”;

Six merchant rolling mills;

A rail and beam rolling mill.

The Combine will produce annually:

8,500,000 tons of sorted iron ore;

Over 4,000,000 tons of coke;

4,500,000 tons of pig iron;

5,000,000 tons of steel;

4,000,000 tons of rolled steel.

When thus completed the Magnitorgorsk Combine will be the largest iron and steel enterprise in the world. Its annual production of pig iron will exceed that of all the iron and steel plants of tsarist Russia taken together.

### *The City of Magnitogorsk*

In the beginning, when the construction of the Magnitogorsk Works first started, a camp town of white tents sprang up at the foot of Magnitnaya Mountain on the banks of the Ural River. In these tents lived the builders of “Magnitka”—engineers, technicians, workers. Soon, however, the tents were replaced by wooden barracks, and these have in their turn been replaced by brick buildings. Today Magnitogorsk is a city of hundreds of tall well-appointed houses, with a population of 250,000, an electric power plant, waterworks, scores of wide streets, squares, boulevards, parks, trams and a good bus service.

In 1938 the expenditure provided for in the city budget of Magnitogorsk included 8,856,000 rubles for educational purposes, and 19,185,000 rubles for public health. An additional sum of 13,500,000 rubles was expended on education, public health, sports and social maintenance out of the budget of the factory committee of the iron and steel workers’ union. Large sums are spent on these purposes by other public organizations, such as the trade unions of the building workers, miners, etc.

Magnitogorsk has two higher educational establishments: a mining and metallurgical institute and a pedagogical institute, forty secondary schools with 25,000

pupils, and pedagogical, industrial and medical training colleges. In addition to these a variety of training courses function in the Works, such as courses for providing higher qualifications, factory apprentice courses, courses for the training of Stakhanovites, university and college preparatory courses. More than 60,000 workers completed these courses in the past six years. A sum of over 42 million rubles has been expended on the maintenance of these courses. The four main libraries of this new city have 230,000 volumes.

The city of Magnitogorsk boasts a fine theatre with a seating capacity of 1,000, eighteen cinemas, a circus, a large number of clubs, including the splendid iron and steel workers' club, which has a large stage and in which concerts are held regularly. Besides concerts by local musicians, recitals are given by singers and musicians from the largest centres of the country, such as Moscow, Leningrad, Kiev, Tbilisi, Baku.

The population of Magnitogorsk, like the population of all towns and villages of the Soviet Union, receives expert medical aid free of charge. The city has seven polyclinics, six general and lying-in hospitals, 26 children's nurseries, a special children's polyclinic, ten women's and children's medical consultation centres, dispensaries, a camp-sanatorium for adolescents with accommodation for six hundred campers at a time, scientific sanitary stations, etc.

The city Soviet of Magnitogorsk devotes a great deal of attention to the development of sports. The facilities that have been provided for sports activities include two stadiums with a seating capacity of 16,000, an aquatic sports station on the Ural River, nine gymnasiums, a hunters' stand, and skating rinks in the winter. In the aeronautical club young people receive training in parachute jumping, gliding and flying.

This, in brief, is the story of an industrial giant and a large flourishing city that have sprung up in the course of a few years in a desolate and practically uninhabited district.

## THE COUNTRYSIDE PAST AND PRESENT

*By V. P. Molyakov*

ORDER OF LENIN. MEMBER OF THE SUPREME SOVIET OF THE  
U.S.S.R. VICE-CHAIRMAN OF THE EXECUTIVE COMMITTEE OF  
THE KALININ REGION

OUR knowledge of the old Russian countryside is now limited to the art galleries, Russian literature and stories told by the older generation. From Russian masters, Russian classics and living witnesses alike, we receive the same gloomy picture of tumble-down shacks, faces haggard with toil and constant under-feeding, bare-footed children in rags, a picture of squalor, ignorance, benightedness and drunkenness.

I remember the village of Bunkovo, in what is now the Krasnokholm District of the Kalinin Region, where I was born and bred. Here the majority of the peasantry had only two and a half acres of land per household, sometimes as little as one acre, while the lion's share of the best land belonged to big estate owners, the clergy and the kulaks. The land was tilled with wooden ploughs and harrows, so that, even in the best years, the peasants got only enough grain to last for six or seven months. The poor and middle peasants had no cows. Hunger drove them into bondage to tight-fisted kulaks who gave them scarcely enough to keep body and soul together.

Schooling for the children was out of the question. Schools were few and only the children of the well-to-do could attend them. At the age of eight or ten, the children of the poor peasants were generally broken-in to heavy farm-work by their parents or were bound as farm labourers to kulaks for "bed and board" or packed off to the cities to "try their luck" there. Such was life for the great majority of the peasants in my home region which was then called the Tver Province.

Thirty-six years ago a surveyor named Penkov came by

chance to one of our villages, Itomla. This is what he wrote: "I've never seen such ignorance and benightedness as there is in these parts. By local reckoning the nearest school is eight miles away, but it must be a good ten miles. No ray of enlightenment penetrates this god-forsaken hole and you would have a hard job finding anyone in the vicinity capable of signing his name."

In the autumn of 1897 the peasants of Staroye Kitovo got permission to open a school. They made the school furniture themselves and engaged a teacher. "There were twelve of us," says Ivan Kulikov, one of the "old boys," now a collective farmer, "and the school was held at each pupil's house in turn, for a week at a time. But the village priest took exception to the idea and at his request the school was broken up in January, 1898, by order of the Chief Constable of the Novotorzhok township, and the village was left in the hands of the priest and the tapster."

In 1897, census-takers assigned to one area in the Moscow Province found that the village of Uskovo had mysteriously vanished. The story brought to light was as follows. The villagers were completely ruined. There was not the remotest possibility of their taxes being paid. Such being the case, Prince Dolgorukov, the Moscow Governor-General, ordered the village to be destroyed, the land to be given over to the crown. The police confiscated the peasants' belongings to the last stick of furniture and their houses were sold to the demolishers, but even then there was not enough to pay the taxes. There was a general exodus. Many of them died of hunger and exposure by the wayside. Gregory Kroshkin and his wife Praskovya hanged themselves, victims to the tyranny of the police and the estate owners.. And so when the census came to be taken nothing was left of Uskovo but a heap of ruins overgrown with weeds.

In tsarist Russia 167 million acres of fertile soil were in the hands of 28,000 big landowners, while 10 million peasant families owned only 197 million acres of land, much of it very poor soil. Thirty per cent of the peasants had no horses, 34 per cent had no implements of any kind,

and 15 per cent had no land at all to sow. For the use of a horse, plough or an extra patch of land the poor peasant had to apply to the landowner or the kulak, and sell himself to money-lenders.

After overthrowing the tsar in February, 1917, and the landowners and capitalists in October, the workers and peasants of Russia began to build a new life.

"1. Landed proprietorship is abolished forthwith without compensation.

2. The landed estates, as also all appanages, the monasterial and church lands, with all their livestock, implements, farm buildings and everything pertaining thereto, shall be placed under the control of the volost Land Committee and the uyezd Soviets of Peasants' Deputies."

This decree was signed by Lenin on October 26, 1917, the day after the victory of the Revolution.

The Soviet Government began to help the poor peasants and middle peasants to put their farms in order, emancipate themselves from an age-old heritage of ignorance and extricate themselves from their poverty.

Primitive and laborious methods of cultivation in small detached peasant farms could never bring good harvests. The only way out was large-scale farming and mechanization. And so the Soviet Government called upon the peasantry to combine their small holdings into large collective farms. The first to respond and pool their resources were the poor peasantry. The state supplied them as far as possible with machines, implements and seeds.

Seeing the advantages of collective farming, the results of improved cultivation by labour-saving machines, the middle peasants too began to join the collective farms. The spread of collectivization was especially rapid in 1929 and 1930 after the Soviet Government had repaired the ruin caused by the imperialist and civil wars and began to industrialize the country. First-class, high-powered machines poured into the countryside. The progress and triumph of collectivization can be seen from the following:

	1929	1930	1934	1938
Number of collective farms .. ..	57,000	85,400	233,300	243,300
Number of peasant households united in collective farms	1,000,000	6,000,000	15,700,000	18,800,000
Percentage of households collectivized (in proportion to the number of households) ..	3.9	23.6	71.4	93.5
Percentage of sown area collectivized (in proportion to the sown area) ..	4.9	33.6	87.4	99.3

Article 8 of the Constitution of the U.S.S.R. declares:

“The land occupied by collective farms is secured to them for their use free of charge and for an unlimited time, that is, in perpetuity.”

The collective farms work to a set of rules in which the public interests in the collective farms are co-ordinated with the personal interests of the collective farmers. In these rules it is explicitly stated that socialization applies only to the land and the means of production—horses, implements and machines. Cattle sheds, stables and other farm structures, clubs and the various subsidiary establishments are public property and used collectively. The family house, personal belongings, domestic animals and poultry remain the property of the respective collective farmers. The collective farmers also have plots for their own personal use, in which they are free to grow vegetables and fruit, or whatever they like.

According to the census of 1910 there were 10 million wooden ploughs and 17,700,000 wooden harrows in use on the peasant farms of Russia. Now State-owned machine and tractor stations have been organized for the service of the collective farms. By 1938 the collective farms and state farms were employing 483,500 tractors aggregating 9,236,200 h.p., 153,500 harvester combines, hundreds of thousands of tractor-drawn ploughs, seeders, scarifiers,

compound threshers and a host of other farm implements of the latest type.

Before the Revolution of 1917, Russia collected an average harvest of from 65 million to 80 million tons of grain, much of which was exported at that, and the peasants lived on the verge of starvation. In 1937, the grain harvest in the U.S.S.R. totalled 120,290,000 tons. The collective farmers have not only plenty of grain for themselves and their families but have a considerable surplus which they sell to the state and in the open market.

In the village of Bunkovo, mentioned above, a collective farm was organized in 1931, under the name of "Krasny Kolesnik" ("Red Wheelwright"). The peasants signed up of one accord. A general meeting of prospective members elected a board of management and I was elected chairman of the collective farm. It was an uphill business until we got used to it. The members had had no previous experience in large-scale farming and were often at a loss what to do. But we persevered until we got things running smoothly. In the same year, 1931, the state organized a machine and tractor station in our district, and tractors, compound threshers and reapers appeared in our fields. This machine and tractor station serves the other collective farms in the Krasnokholm District. Over 90 per cent of the population in this district consists of collective farmers and their children.

The members of our collective farm are divided into groups or brigades. Often the brigades are sub-divided into teams. Each brigade under its leader works in a particular department of the farm as the management directs, in the fields, the market garden, the orchard or the stock farms, as the case may be. For each type of work a certain standard of performance is fixed which the collective farmer can fulfil in a day's work without any strain. This counts as a "Work-day-unit." Many farmers by properly rationalizing their methods of work earn two and three units a day. Each collective farmer is given an advance in money or in kind before the final settlement.

Our village has changed beyond recognition. New

collective farm cottages have been built in place of the wretched hovels that used to be. There is a wireless set in every home.

Livestock is kept in two large and well-built steds. The collective farm has acquired a horse thresher, two self-delivery reapers, two mowers, several horse rakes, two seeders, a potato-digger, a complete set of machines for cleaning seeds and a flax-brake. Every member of the collective farm (kolkhoz) has enough money and grain for his needs. Every family has a cow and, with few exceptions, sheep, pigs, chickens and geese.

Nurseries and playgrounds have been organized where nurses look after the children until their mothers come home from work.

Bunkovo is an example of the modern, enlightened Soviet village. Eleven of the local peasants have graduated from technical colleges, twelve more are studying in institutes and training schools. All children of age go to school. Lorry-drivers, mechanics, harvester-combine operators and tractor drivers were unheard of in the countryside. Now they are met with everywhere. The collective farmers study scientific methods of agriculture. All this makes for good harvests. In 1937, for instance, Kharitina Molyakova with a group of women farmers collected eight cwt. of flax staple to the acre.

The government took note of the good work of our collective farm and awarded me the Order of Lenin, as the chairman of the board of management. Later I was made director of the machine and tractor station and now I am in charge of the agricultural work of the whole Kalinin Region as the head of the regional land board. In 1937, the people of the Bezhetz Constituency (Kalinin Region) elected me to the Supreme Soviet of the U.S.S.R.

Itomlya, so forlorn and benighted in the past, now has a secondary school with accommodation for 450 children, a collective farm club auditorium seating 800 people, a hospital and a maternity home. There is also an experimental farm and several veterinary establishments. This village alone boasts as many professional people, mostly of



local origin, as there were in the three neighbouring rural districts or *volosts* before the Revolution. Itomlya is connected with the city of Rzhev (30 miles away) by telephone and automobile. And the wireless connects it with the world at large.

In Staroye Kitovo, which was once deprived of its sole enlightening influence through the interference of the village priest, an elementary school and a secondary school have been built. There is not a single illiterate person in the village. Every householder takes in a newspaper. There is scarcely a house without a wireless set and a home library.

Cherneshchina is another thriving collective farm village. The "Iskra Kommunisma" Collective Farm has a flour mill driven by an internal combustion engine, an oil mill, stables, a piggery, several granaries and a dairy farm. There are three other collective farms like it in the same village, which has four clubs, several lending libraries and nurseries. A fair number of the peasants have become intellectuals, working locally as school teachers, doctors, agronomists and stock-breeding experts.

The same progress is to be noted in all parts of the country. Take Malgeldi, a village in the Lenin District of North Kazakhstan, which was one of the most poverty stricken, uncivilized and blighted spots in the old Russian empire. The whole population lived in ignorance and drudged for the bey. Now this village is noted for the prosperity of the local collective farm ("Enbek"). Last year the work-day-unit worked out at 100 pounds of wheat. The collective farm grazier Beissembayev earned 90 tons of wheat and 3,200 rubles' cash. The collective farmers have built themselves decent houses. Two hundred and sixty children are attending elementary school, and scores of others are at the secondary school and vocational training schools.

As for Uskovo, so ruthlessly razed to the ground by the tsarist authorities, the Soviet Government helped the villagers to rebuild it and settle down again. The prosperous "Novaya Zhizn" Collective Farm has risen where the

ruins used to be. Fine wheat grows in the fields that were choked with weeds. There are no illiterate people in the village. Collective farmer Vasili Krupin has three sons working as engineers. Gerassim Moiseyev has sons in the Air Force and the Tank Corps.

At Vozhgali, a village about forty miles from the city of Kirov (Vyatka, as it used to be called), there is a collective farm named "Krasny Oktyabr." The peasants who organized it were natives of Chokota. This village had had so many gloomy associations for its inhabitants that they decided to make their fresh start somewhere else. So they abandoned their mean, tumble-down hovels and settled in in Vozhgali. And within a few years they made it a flourishing settlement of two-storey houses, a centre of highly-developed collective farming.

And if you should meet any of the "Krasny Oktyabr" school children, try to persuade them that their fathers and grandfathers lived without electricity, wireless sets, tap-water, without a collective farm bath-house, without electric kettles and electric irons, without musical instruments and motor trucks. They simply won't believe you.

This collective farm has its own theatre, park of culture and rest, and a sports ground with a tower for parachute jumping. In the winter time the collective farmers relax in turn at a splendid rest home which stands in a densely wooded park, on the verge of a miniature lake. Other forms of recuperation are no novelty to the members of the Krasny Oktyabr Collective Farm. In many' homes you will find photographs showing your host or hostess holiday making in the Caucasus, or taking a rest cure at Kislovodsk.

One involuntarily looks back on the old Russian countryside and its facilities for "rest and entertainment." After a gruelling week's work the peasants would go to church and from there to the drink-shop to drown their sorrows and forget their wretched existence. Then they would stagger home, making the night hideous with raucous songs, some to sleep, others to beat their wives and

children black and blue, the only method they knew of "letting off steam."

Often enough the "revellers" themselves came to blows in bitter earnest as they remembered old wrongs, old disputes about one man's miserable wooden plough encroaching on another man's miserable plot of land. Among the popular "sports" of the time were fist-fights between villagers of two streets in the same village. These hostilities were commonly instigated by the vodka dealers as each "combatant" required a good stiff drink before going into battle.

Now take a trip some evening to the collective-farm village of Ripsha, Smolensk Region. The loud puffing of exhaust steam from the power station greets your ears. Pleasant harmonies steal from the brightly-lit windows of the house of culture. A young collective-farm virtuoso is playing Schubert's "Moment Musical" on the accordion. In the next room half a dozen collective farmers face half a dozen others across chess boards. Pages can be heard rustling in the reading-room. Some team leaders have gathered for their class in agricultural science.

Go to Torzhok some evening, a country town in the Kalinin Region, and count the farm wagons and automobiles as they draw up at the local theatre. The collective farmers are coming from the surrounding villages to see *Romeo and Juliet* or some other attraction.

I could mention hundreds of villages like these. I have purposely taken the average collective farms for my examples of modern life in the Soviet countryside. But there are collective farms far richer than those I have mentioned. Many of them count their incomes in millions of rubles. The Soviet countryside and Soviet country life have changed beyond recognition.

The right of citizens of the U.S.S.R. to education is written in the constitution. In the Soviet Union, universal elementary education for children is compulsory and you will not find a single village where children have no opportunity for education. Furthermore, every child who has been through elementary school has the opportunity to

continue his or her education at a secondary school in the same locality. A large percentage of the secondary-school children enter the institutes of higher education and technical colleges. During the Third Five-Year Plan period seven year secondary-school education will be made universal in the countryside and the number of high schools will be greatly increased.

Clubs, theatres, cinemas, reading rooms, "Red Corners"<sup>1</sup> and houses of culture, sports grounds and stadiums, aeronautical clubs, laboratory rooms and old folk's homes are becoming part and parcel of the collective farm village. Even now, quite a number of collective farms have their own rest homes.

In the Russian Soviet Socialist Republic alone we have at the present time 41,000 reading rooms, about 20,000 collective farm clubs, over 50,000 "Red Corners," about 2,000 houses of culture, 7,075 village libraries, 2,240 district libraries, and 2,336 kindergartens. During the summer of 1938, the playgrounds organized for the duration of the farming season accommodated over one million children.

We find the same picture in all parts of the U.S.S.R. Many collective farm villages have theatres. Dramatic, musical and literary societies have been organized in every collective farm club. The sports galas held at the stadium in the village of Chapayevka, Kiev Region, are famous all over the country. The aeronautical club in Ukholovo District, Ryazan Region, has turned out no small number of first-class air-pilots and parachute jumpers of both sexes, trained in their spare time.

Before the Revolution the peasants were "doctored" for the most part by quacks and charlatans of every description. Children were brought into the world by ignorant old women. Only in rare cases was a feldsher<sup>2</sup> available.

But now, even a splendid hospital like the one at

<sup>1</sup> Recreation rooms.

<sup>2</sup> Feldsher: A medical practitioner of limited authority, primarily for first aid.

Nashchekino, a village in the Smolensk Region, complete with a therapeutical, surgical and obstetric department, is no novelty in the countryside. Now there are about 15,000 clinics in the countryside and about 23,000 medical stations. X-ray and physio-therapeutical rooms have been opened in large numbers.

Every year the People's Commissariat of Public Health issues a large number of health resort tickets to the collective farms. By decision of the government a new contingent of 4,500 qualified medical practitioners is to be sent into the countryside this year.

The people of the Soviet countryside have developed enormously. Many of them, like the air aces Vodopyanov, Paulina Ossipenko and Molokov, the Academician Lysenko, and Lemeshev, the famous opera singer, are the pride of the Soviet people. Their names are household words.

Many men and women collective farmers have been decorated for their services and elected to the supreme parliamentary bodies of the U.S.S.R. and constituent republics and participate in the government of the country.

The Revolution emancipated the women, gave them equal rights with men. Their last fetters were snapped by the collective farm system. The women collective farmers earn work-day-units in their own right and are dependent upon no man for their keep. Tens of thousands of women collective farmers are working as brigade leaders, as chairmen of collective farms and village Soviets. No less than 50,000 women are working as tractor drivers and harvester-combine operators. It was a woman, Maria Demchenko, who took the lead in developing the Stakhanov movement in the countryside, which has now enlisted immense numbers of men and women collective farmers.

Every year brings increasing harvests, increasing productivity in the livestock departments and increasing prosperity for the collective farms. The collective farmers are living a well-to-do and cultured life. And with the

advance of culture in the villages, the difference between town and countryside is slowly but surely passing away.

## SCIENCE AT THE SERVICE OF SOVIET AGRICULTURE

*By N. Tsitsin*

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MEMBER OF THE SUPREME SOVIET OF THE U.S.S.R.

**T**WO conceptions more remotely related than peasant farming and agricultural science could hardly have been found in old Russia.

The peasants jogged along as best they could without the aid of science or any prospect of receiving it. Only after the establishment of Soviet government did agriculture develop into a concerted effort for high crop yields, with the state directing and supporting it as a prime duty.

In a comparatively short time all conditions have been created in the Soviet Union for the unrestricted development of agricultural research on a scientific basis. There are now over 14,000 scientists at work in agricultural research, 90 agricultural research institutes, 367 experimental stations, and 507 experimental farms with numerous branches, whereas in tsarist Russia institutions of this kind could have been counted on one's fingers. But that is not all. Bearing notable witness to the tremendous interest of the Soviet peasantry in scientific agriculture, there are about 20,000 small but efficient laboratories functioning on the collective farms (*kolkhozes*). It is not difficult to imagine on what fertile soil falls every scientific discovery and innovation.

In 1938 seventy per cent of the area under grain in the collective farms and state farms was sown with high-grade seeds.

The state has organized 1,547 experimental farms for the testing of cereal seeds in all parts of the country.

Furthermore 693 agrochemical laboratories have been organized by the machine and tractor stations.

In the U.S.S.R. no scientific discoveries are left to grow cobwebs. They are immediately put to exhaustive tests and practical use and it is easy to imagine what a great incentive to scientists is thus provided.

For instance: in the spring of 1936, the All-Union Institute of Seed Selection and Genetics sent a newly-evolved variety of spring wheat ("Lutescence 1163") to a large number of collective farms for propagation. The members of the "Fifty-First Perekop Division" Kolkhoz (Odessa Region) received 6½ lbs. of seeds for their laboratory. They proceeded with enthusiasm to their propagation. This half peck of seed produced a yield of 13½ cwt. in the first year. In 1937 the kolkhoz collected a harvest of 167 cwt. from the new variety of spring wheat. And a year later "Lutescence 1163," which has proved to be the highest yielding grain in the southern districts, held dominion over 2,470 acres in this farm.

Rapid developments are being made in the theory of controlling vegetable life to reform inherited characteristics for the benefit of agriculture.

The late I. V. Michurin, a member of the Academy of Sciences, working in the same field as Luther Burbank, proved that under suitable conditions young hybrid seedlings can be trained to develop any desired characteristics.

Michurin took hardy wild plants from Siberia, Canada and various mountain regions and crossed them with delicate southern plants. The cross-breeds so obtained inherited all the hardihood of the wild flora: resistance to frost and drought and immunity to disease. On the other hand, they resembled their delicate parents of the south in tastiness, brightness of colour, largeness of fruit, and other desirable characteristics. In this way Michurin bred a large number of remarkable varieties of fruit, among which we might mention the Belfleur Kitaika apple, the Krasa Severa cherry and the Michurin beurré. As a result of a number of interesting and original experiments he also succeeded in hybridizing the cherry and

bird cherry, the peach and the almond, the apricot and the plum, and many other fruits. Altogether Michurin evolved 300 valuable varieties of fruit. Michurin's work has found many followers. Michurin orchards and Michurin clubs have sprung up in all parts of the country.

Year by year grapes and peaches, pears and lemons continue their triumphal advance to the north, spreading to new territories. In the R.S.F.S.R. alone about 10,000,000 Michurin trees will be bearing fruit by 1940. The fruit gardens of the U.S.S.R., covering an area of 3,211,000 acres, produce more than twice as much as before the first World War.

Apart from state-owned orchards there are large kolkhoz orchards supplying the market. The district of Genichesk, Zaporozhye Region, where in 1917 there were neither orchards nor vineyards, now has 1,069 acres of orchards and about 1,000 acres of vineyards.

Michurin's labours have introduced important new factors in the development of citrus plants and other sub-tropical crops. Now in the coastal regions of the West Caucasus new plantations of oranges, lemons, tangerines and tea are being developed year by year. Sunny Georgia is becoming the supplier of citrus fruits for the whole country. In 1938 over 250 million of the oranges and lemons placed on the market were grown on state farms and collective farms. By 1940 the Georgian republic will have 50,000 acres under citrus fruits.

Trofim Lysenko, member of the Academy of Sciences, is another outstanding scientist whose work has greatly assisted the development of Soviet agriculture. He is the author of the theory that the development of annual plants proceeds by stages. The first and second of the stages he found to consist in reaction to temperature and light respectively, and upon these he concentrated. From these studies Lysenko evolved a new process in scientific farming: vernalization, that is, subjecting the seeds to indoor temperature before planting. The experience of tens of thousands of farms has shown that as a result of vernalization the seeds sprout two or three days earlier,



while the yield increases by an average of 90 to 180 lb. per acre.

The vernalization of grain crops is practised on a wide scale in the U.S.S.R. In 1938 the area under vernalized grain reached 24,700,000 acres, and this year's plan (1939) is 35,748,000 acres. The vernalization of sugar beet, potatoes, cotton and other crops is also widely practised.

Lysenko has also devised new methods of selection. Using these methods he has produced in the space of two and a half years excellent varieties of spring wheat in the Odessa region. With his colleagues, Lysenko has devised a method of improving the seeds of self-fertilizing plants by interbreeding and nursing them on seed plots. The farms using these improved seeds gain an extra yield of 134 to 178 lb. per acre.

The writer himself is working on cross-breeding cultivated plants with extraneous wild grasses. We have made many successful experiments in crossing wheat with couch grass, and have discovered the varieties of this very common weed that cross with wheat. In 1930 I produced the first hybrids of wheat and couch grass. This led to the novel hypothesis that a new variety of plant, non-existent in nature, might be obtained—perennial wheat. In 1934 the first families of perennial hybrid wheat, Nos. 34085 and 23086, were selected. They proved my theory.

These perennial wheats have the unusual power of growing again after reaping. It has been demonstrated under experimental conditions, with three years' continuous vegetation, that these hybrids yield seven or eight harvests from a single sowing. At the present time perennial wheat is being tested by our farmers. Even under the unfavourable climatic conditions of 1938 in the Moscow Region perennial wheat yielded as much as 19 cwts. per acre. Perennial wheat also has exceptional drought-resisting properties.

In addition to these perennials, annual forms of the same hybrid have been evolved with numerous, valuable

properties and characteristics of their own. At an experimental station in Voroshilovsk (North Caucasus) the agronomist Derzhavin is working on important experiments towards hybridizing a variety of hard wheat with perennial rye. He too has evolved a triennial wheat.

My theory that every agricultural plant can be matched with a wild one has become a principle guiding many research workers.

The results of these studies in wheat breeding, so wide and diversified, have already been put to practical use in Soviet agriculture. Wheat, like Michurin fruits, is being grown further and further north and spreading over wider areas every year. In the old days the central regions of Russia proper grew nothing but rye. Wheat bread was a rare delicacy on the table of the Russian peasant, and was regarded as a sign of prosperity.

At the present time wheat is being sown in a large number of new regions. Even where the climate is severe for wheat, there are no peasants who go without white bread.

The conquest of the Arctic, the discovery of new deposits of coal, apatite, iron and other economic minerals in the far north of the country have led to the population of uninhabited districts and created a demand for local farm produce. In this direction useful work is being done by the Arctic experimental station of the All-Union Institute of Plant Growing, directed by Academician Eichfeld. This polar station has evolved new kinds of barley, oats, vegetables, fodder grasses, potatoes and other edible roots suitable for cultivation in the Far North. In the Republic of Yakutia, with its perpetually frozen soil and brief dry summer, the kolkhoz farms, by employing advanced agrotechnical methods and cultivating the soil with tractors, are getting good harvests regularly. For instance, the Orjonikidze Kolkhoz, in a district where the annual mean is 9° C., grows 22 tons of cabbage to the acre.

Before the October Revolution there was no hothouse farming in the Far North. Now there are 73,000 hotbeds

and 451,920 sq. feet of greenhouses. On the shore of the Kola Strait, near Latitude 70° N., the collective fisheries "Tarmo" and "Taisto" obtain over 8 tons of potatoes and 16 tons of other edible roots to the acre. In 1938 the "Industria" State Farms in the Murmansk Region harvested 12,792 cwt. of vegetables, about 28,000 cwt. of potatoes, thousands of centners of edible roots and tens of thousands of centners of hay. Apart from sowing in the open field this state farm also has a large area under glass, which in 1938 yielded 436 tons of vegetables. The growing of greens in the open air has now become practicable right up to the shores of the Kara Sea and the Siberian coast of the Arctic ocean.

Soviet agricultural science has been highly successful in naturalizing crops in new localities. The Kuban is now growing rice, while the North Caucasus and the Ukraine are growing cotton. New sugar beet districts have been developed on the Kuban, in the Saratov Region, the Altai Territory, and other parts of the country. By 1937 the area under cotton in the U.S.S.R. had reached 701,480 acres, and in the Ukrainian S.S.R. 553,280 acres.

The great emigration of crops to the north of the country was undreamed of by agronomists in the old days. It has become possible, due largely to the fruitful labours of Soviet scientists in genetics, selection and seed farming. The U.S.S.R. has the most northern cotton plantations in the world, extending to 48° N.

In Azerbaijan (Caucasus) and Turkmenia (Central Asia) new varieties of Egyptian cotton have been produced and are already being cultivated in the collective farms and state farms. These varieties are extremely fertile and ripen early. In 1930 the plantations of Egyptian cotton in the U.S.S.R. covered a total area of only 11,830 acres. In 1938 Egyptian cotton was being grown over an area of 339,748 acres. Highly fertile varieties of American cotton, with a long fibre, have been evolved by selection and are becoming widespread.

The Odessa Institute of Selection and Genetics (directed by Academician Lysenko) has bred two new fertile and

early-ripe varieties of cotton (OD-1, OD-2) growing a long fibre. This year 50,000 acres of land will be planted with these varieties.

A number of successful experiments have produced several new varieties of sugar beet with a high sugar content and other valuable properties.

Soviet selection experts have also evolved highly fertile varieties of potato. For the first time in the history of the science of selection, the Potato Institute has produced a variety (No. 8670) that resists parasites (Phytophthora). With the help of the collective farms this institute in four years obtained 11,500 tons of potato from 20 beds planted with "8670." Lysenko has also elaborated a method of planting potatoes in summer, which has revolutionized the development of this culture in the steppes of the U.S.S.R. Formerly planting stock in the south had to be completely renewed every two or three years with seed potatoes from districts further north. This was regarded as the only method of preventing potatoes from running to seed in southern districts, like the Crimea, where the crop scarcely recompensed the farmer for what he had sown. Summer planting put an end to this. The collective farms and state farms in the south now obtain good crops regularly every year. For instance, the "Chervonny Kazak" Kolkhoz in the Jankoi District of the Crimea increased the yield to ten and a half tons per acre by using Lysenko's method.

Great progress has been made by Soviet scientists in the protection of plants against pests and blights. Especially wide use is made of oöphagous trichogramminæ to combat destructive moths and grubs and hundreds of special laboratories for the breeding of trichogramminæ have already been organized on kolkhoz farms.

One of these laboratories, directed by collective farmer Moskalenko of the "Shlyakh Lenina" Kolkhoz, Yampol District, Vinnitsa Region, Ukraine, bred 37,000,000 of these insects, which afterwards rid an area of 914 acres of destructive moths.

Soviet research laboratories have discovered a number

of viruses for use in combating various agricultural pests and diseases.

Great progress has also been made in the field of agrochemistry. Academician Pryanishnikov has discovered the principle of using ammonia salts as fertilizer.

In recent years leading collective farmers, state farm employees and managers of kolkhoz laboratories have been experimenting with the "dieting" method, that is, dosing crops with fertilizer at various stages during the vegetation period. At the present time this method is being used on huge areas, particularly those under industrial crops.

In tsarist Russia the outlay of potassium fertilizer was something less than a teaspoonful to the acre but in the U.S.S.R. mineral and natural fertilizers are used in vast quantities. In 1937 90 per cent of the beet fields and cotton plantations were enriched with mineral fertilizer. At the same time there is a constant increase in the general distribution of manure.

In 1937 the chemical industries of the U.S.S.R. supplied the countryside with 2,798,000 tons of mineral fertilizer, as against 230,000 tons in 1913.

Among the great achievements of Soviet agricultural science we must also count the introduction of bacterial fertilizer—nitragin—for various bean cultures, and the invention of a bacterial fertilizer—"Azotogen"—for cereals, industrial crops and vegetables. Experiments have shown that this fertilizer increases harvests by as much as 20 and 30 per cent.

The Tractor Institute and a number of tractor plants have designed and built tractors powered with Diesel engines and gas producers, which, as tests have shown, run at a low cost and give long service without repairs.

The Institute of Scientific Sowing has designed machines for sowing in close drills. When sown in the usual way plants often grow in adverse conditions, are ill-nourished, stifled by their neighbours and stunted in development. The new seeders will make it possible to distribute the plants more rationally, so as to guarantee, as far as

possible, a place in the sun for all. New types of seeders have been invented for grain crops, sugar beet and other industrial crops. In 1939, 2,717,000 acres were sown with these close seed drills.

Under the First Five-Year Plan much was done in theory and practice to improve grain harvester combines. Special attachments were devised for collecting sun-flowers, castor oil plants, millet and other crops. Soviet inventors have devised a special harvester combine for collecting grain crops in the humid conditions of the northern districts. Hundreds of these special "northern" combines were employed during the harvest last autumn.<sup>1</sup> Soviet engineers have also designed machines for the planting, cultivating and picking of potatoes, sugar beet, flax, cotton, and other crops laborious to farm.

No less progress has been made by Soviet scientists in the field of livestock breeding. Unfortunately, lack of space does not allow me to dwell in detail on this department of farming. I might mention the work of Academician Ivanov, who is breeding valuable hybrids, notably the Askana Rambouillet and a new breed of pig—the Ukrainian White.

The All-Union Institute of Animal Breeding has developed a method and technique of inseminating animals artificially, so as to make the maximum use of valuable males. In 1938, 1,536 cows were inseminated from one bull and produced 1,490 calves; 15,016 sheep were inseminated from one ram and produced 15,662 lambs. By 1938 fifty million farm animals had been inseminated artificially in the Soviet Union.

Whatever branch of agriculture we take we find thousands upon thousands of collective farm experimenters working shoulder to shoulder with scientists in search of new methods, new discoveries. This movement of innovators, boldly and rationally transforming nature, is becoming a real mass movement, a movement of the people. This is seen from the fact that at the All-Union Agricultural Exhibition of 1939, which will exhibit only

<sup>1</sup> 1938.

the best of the best, 160,000 to 200,000 collective farms, state farms, machine and tractor stations, collective farm brigades and teams will be represented—real enthusiasts and front-liners of Socialist agriculture.

This close contact between Soviet science and the people allows our men of science to go boldly ahead with their experiments, enriching the collective farms and state farms with a wealth of modern scientific discovery.

Much has been and is being contributed to science by the practical experience of the collective farmers. Soviet academicians and professors, all our leading scientists, make these contributions the basis of their work in the service of Soviet science and the Socialist farms of the U.S.S.R.—the country of large-scale agriculture unmatched in the world.

Ivan Michurin often said: "We can expect no favours from Nature; our job is to wrest them."

In the U.S.S.R. thousands of people are taking part in this great duel with Nature, in a true spirit of innovation, enthusiasm, pertinacity and research. That is why the reorganization and renewal of the countryside in the Soviet Union has, in the space of twenty-one years, produced such astonishing results.

## THE COLLECTIVE FARMS (KOLKHOZ)

*By F. Klimenko*

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**I**N tsarist Russia the 28,000 landlords owned 467 million acres of land and the 10 million peasant households 197 million acres, of which the most fertile sections were owned mainly by the kulaks. Huge tracts of the best land were the property of the royal family and of the monasteries. The landlords and kulaks, who constituted

somewhat over 13 per cent of the population, controlled 71.6 per cent of all the grain marketed.

The old villages were poverty-stricken and squalid: 65 per cent of the peasant households were made up of poor peasants; 30 per cent had no horses and 34 per cent no agricultural implements, being obliged to hire them from the kulaks if they wanted to cultivate their tiny allotments or the plots they managed to rent from the latter or from the landlords. Most of the harvest went to pay for these services, leaving a bare pittance for the peasant's family. Fifteen per cent of the peasants did not have the wherewithal to sow any crops whatever. For many peasants a piece of unadulterated bread made of pure grain was a rare feast, since most of the year they ate all sorts of substitutes.

Every year 2 million poor peasants left their homes to work on the landed estates and kulak farms in the Kuban and the Ukraine.

Yuzkui, the village where I was born, can serve as a vivid illustration of the backward and impoverished condition of the peasants before the Revolution and the brutal exploitation to which they were subjected.

There were 3,000 households in our village. The best lands belonged to the landlords Virkentin and Fischer, and were worked by hands hired in our village and the nearby villages and by landless peasants from other parts of the country who were driven by poverty and hunger from place to place in search of work and bread. The peasant allotments in our village were only about five or six acres, and never more than eight. The land was worked in an extremely primitive way: a piece of land was sown, the crop harvested and then was left to lie fallow while another plot would be cultivated. Crop rotation and scientific farming had never even been heard of. No fertilizers were used on the land. Selected seed was quite out of the peasant's reach. Only very few among the peasants owned metal ploughshares or reapers. Most of the Yuzkui peasants used antiquated wooden ploughs and flails. Nor did every peasant have a horse.



Those few who could boast of one, for the most part possessed only some sorry old nag. It is small wonder then that the grain yield on the peasants' land was generally from 0.15 to 0.2 tons per acre, and decreased with every year.

Land hunger drove the peasants into kulak bondage. Here is the story of Ivan Ponomarenko, a former farmhand, now a collective farmer: "My father was a cowherd for twenty years on the estate of a big landlord named Fischer. We were a big family, thirteen of us, all huddled together in a little mud hut. We never had a horse or a cow; our livestock consisted of half a dozen hens. On the 1.3 acres of land we had, we planted potatoes. During the war I worked on the estate of Grand Duke Michael, the brother of Tsar Nicholas. I earned around forty rubles a year. Cabbage water soup and millet was what I lived on. It was only on big holidays that I tasted meat."

This is how the poor peasants lived in tsarist Russia; nor were the middle peasants much better off.

In November 1917 the workers and peasants drove out the landlords and capitalists, put an end to private property in land and turned over the big estates and the monasterial lands to the working people. The countryside began to emerge from its age-old ignorance and to refashion its life along new lines.

The Communist Party and the Soviet Government showed the peasants that the only way they could put an end to kulak exploitation and, with it, to poverty, was by passing from petty individual farming to large-scale socialized farming. The Soviet peasantry adopted this way and began to set up artels—associations for the joint cultivation of the land—and in some cases an even higher form of collective farming—agricultural communes.

In 1921, our village of Yuzkui organized a commune which we called "Equality Commune." It was started by a number of Red Army men who had returned to the village after the Civil War—Nikifor Sologub, Ivan Chaplyga, Yegor Simonenko, Pavel Chernenko, Afanasy Pivoarov and my father, Nikita Klimenko, all former

peasants of Yuzkui. Originally the Commune included eleven families. They received land that had formerly belonged to one of the landlords' estates, pooled their horses, cows and agricultural implements, and, disregarding the kulaks' venomous threats and dire prophecies, set to work.

At first things were difficult. The Commune had no seed, only five horses, and no equipment but a seeder and a buckler. But the government gave us a helping hand, and the Commune began to grow and become strong. By 1927 it was already cultivating 925 acres of land and had 17 horses, 4 pairs of oxen, 42 cows, a large number of hogs, sheep and poultry.

Starting with 1918, peasants began to abandon their individual methods of farming and to adopt collective cultivation of the land. In addition to the communes, artels, or agricultural co-operatives, began to appear. The poor peasants were the initiators of these associations and their leading members. The middle peasants were undecided and waited to see how things would turn out. However, when they saw with their own eyes the advantages and profit resulting from working in common, they too began to enter the collective farms (*kolkhozes*).

The state supplied the kolkhozes with seed, machinery and other agricultural equipment, and accorded them various privileges. With every year the number of collective farms increased. In 1918 there were 1,600; in 1923, 12,609; in 1927, 18,840; and by 1928, 33,258. The influx of poor and middle peasants began on a large scale in 1929. By that time the Soviet Union, having restored its economic life after the devastation of the imperialist war and the Civil War, was developing industry at a rapid pace. The countryside was supplied with thousands of first-class agricultural machines. The collective farms expanded and took firm root. In 1930 their number increased to 85,900, and by 1934 it had reached 233,300.

At the end of 1929 the various small kolkhozes and communes in our village, including our Equality Commune, merged to form the big new Stalin Commune.

Our crops increased every year; we acquired new machinery and equipment; our income grew steadily. All was not smooth sailing, however. Not every member of the Commune came to work on time, nor did everyone work equally well. Yet all the members shared the benefits of the Commune equally.

At the Congress of Kolkhoz Shock Workers our chairman, Pivovarov, had a talk with Stalin. Stalin asked him many questions about our Commune. He wanted to know whether the members had cows, pigs and poultry for their personal use, and what difficulties they encountered. When he had heard all the details, he advised us to adopt the Rules of the Agricultural Artel and to supply every household with a cow, poultry, and so on.

We followed his advice and reorganized our Commune into a kolkhoz along the lines of the new Rules of the Agricultural Artel. The kolkhoz members were provided with cows, pigs and poultry for their personal use. We instituted rigid control of each member's output and divided our income in accordance with the number of work-day units each member of the kolkhoz had to his credit.

What is a work-day unit?

It is the equivalent of the average amount of work that can be performed by a collective farmer in one working day, as fixed by the standard quota set for each type of work. These quotas are fixed for each collective farm in accordance with the condition of the machinery, the draft animals, the soil, the difficulty of the work, the degree of skill required, and so on. For the performance of the specified day's quota of work the collective farmer is credited with one work-day unit. If in the course of the day a kolkhoz member performs more than the specified quota, he is credited correspondingly with more than one work-day unit. Thus his share in the collective farm income depends on the quantity and quality of work performed. The work-day units are calculated and recorded by the head of the brigade in which the collective farmer works and by the quality inspector, after the work has

been inspected. This distribution of income according to the work performed helped to improve discipline and increase labour productivity. The farm began to develop even more rapidly.

The collective farm Rules definitely specify that on entering a kolkhoz the peasant must hand over to it the land he has been using, and also his draft animals and agricultural equipment. Cows, domestic animals and poultry are not subject to socialization, nor is the peasants' personal property. The public buildings of the collective farm—stables and sheds for its livestock and poultry, granaries, clubs, etc.—are in the collective use of the farm. In addition, every kolkhoz household is allotted a plot of land where a vegetable garden or orchard can be cultivated for the personal use of the household.

To assist the collective farms, the Soviet Government has established machine and tractor stations all over the country. At present there are 6,350 such stations in the Soviet Union. At the end of 1938, 483,500 tractors, 153,500 harvester-combines, 195,800 lorries, hundreds of thousands of tractor-drawn ploughs, seeders, cultivators, complex threshers and various other up-to-date agricultural machines were employed in the Soviet fields.

The attention accorded the peasants by the Soviet Government, its constant concern for their welfare made possible the successful introduction of universal collectivization and the transformation of the U.S.S.R. from a country of small-scale, backward agriculture into a land of mechanized agriculture on the largest scale in the world.

In the U.S.S.R. today there are 243,300 kolkhozes, which unite 18,800,000 peasants' households, or 93·5 per cent of all peasant households in the country.

Our collective farm numbers 674 families, 518 of which were formerly families of poor peasants. Nearly 30,000 acres of land have been reserved to us. The farm includes 1,480 acres of hayfield, 8,980 acres of pasture, 104 acres of woods which serve to protect the fields from winds, and 1,081 acres of vegetable gardens and orchards. Besides

this, several hundred acres of land constitute the plots in the collective farmers' personal use.

The kolkhoz management board is elected at a general meeting of the membership. Important matters, such as the distribution of income, capital construction and large purchases, are decided on only by the general meeting.

In most of the collective farms the members are divided into brigades. We have twelve production brigades, whose heads are elected by the general meeting. We also have an agronomist, several breeding experts, and a veterinary surgeon.

We have 13,830 acres under field crops, 60 per cent of which are grain. Industrial crops are raised on 1,270 acres, cotton occupying 1,185 acres. The rest of our land is sown to fodder, vegetables and gourds.

Our collective farm is located in the South of the Ukraine, by the Sea of Azov. This region is rather arid, but we are learning to master nature, and our farm has large harvests of all crops every year. Despite the exceptional aridity of the summer of 1938, our average grain yield was 1,456 lb. per acre, and the yield of non-irrigated cotton, the cultivation of which we first introduced five years ago, amounted to 715 lb. per acre.

Scientific methods of farming and mechanization are helping us to combat drought. We are extending the area of autumn and early spring fallow for grain crops, ploughing the fallow in good time, and weeding it by tractor as often as six times. We plough by tractor to a considerable depth 8-9.5 inches, and use large quantities of potassium, phosphate and nitrate fertilizer in addition to manure. We sow only high-grade selected seed. For our spring crops—cotton, oats, barley and the rest—we always plough the land to a good depth in the autumn or early in the spring. We are boldly applying the latest discoveries of agronomy and the experience of the foremost Stakhanovites on our fields. Thus, for instance, vernalization methods recently evolved by Academician Lysenko have enabled us to increase the yield of cereals and cotton by 135-180 lb. per acre.

Mechanization is a most important factor in increasing the yield in our collective farm. The entire spring and autumn ploughing is done exclusively by tractors. In 1938, 97.7 per cent of the area under grain was harvested by combines. All the land left fallow for the 1939 crop was tractor ploughed, as was 77 per cent of the land ploughed in the autumn. Weeding, harrowing, clearing the field of stubble, and other processes have also been mechanized.

The number of our livestock is increasing as well. Our collective farm now owns 800 head of cattle, 460 horses, 7,000 sheep and 360 pigs, exclusive of the animals that are the personal property of the collective farmers themselves. The livestock is kept in light, warm and airy buildings, which have running water and are always clean and orderly.

Big progress in stock-raising has been made throughout the country. In 1938 alone, the number of horses in the kolkhozes increased by 8 per cent, the number of colts by 9 per cent, of sheep and goats by 19 per cent and cattle and pigs by 6 per cent.

The increasing yields and growing productivity in stock-raising are accompanied by an increase in the wealth of the collective farms and in the material well-being of the collective farmers themselves.

Whereas in 1930 the gross income of our kolkhoz was 424,000 rubles, by 1938 it had reached 3,300,000 rubles.

The greater part of the income is distributed among the members in accordance with the number of work-day units credited to them; 4.3 per cent goes for government payments, 0.8 per cent for managerial expenses. We also spend large sums for developing the farm and providing conveniences for our members. When the Commune was first organized, we did not have a single decent building, not a single machine of any kind. Now our streets are lined with well-built houses. We have 8 power engines and 9 lorries. Every brigade has its silo. The animals are housed in newly-built modern sheds and stables. Our buildings, tools and machinery total a value of nearly 2 million rubles.

In 1933 every collective farm household in the grain regions received on an average one clear ton of grain for the year. By 1937 this amount had risen to 2.36 tons. The total cash income of the collective farms of the U.S.S.R. has increased during the same period from 5,661,900,000 rubles to 14,180,100,000 rubles.

In 1938 our kolkhoz distributed 1,960,000 rubles in money as the share due for work-day units. The income in kind is also divided in accordance with the number of work-day units after grain deliveries to the state have been made, payment has been rendered the machine and tractor stations for their services, seed has been set aside for the next sowing and fodder has been provided for the collective farm cattle. In 1938, our kolkhoz members received 11 lb. of grain and 5 rubles 10 kopeks in cash for every work-day unit. Take collective farmer Borodin's family. This family received 6.7 tons of grain and 6,932 rubles in cash as their share of the collective farm income. Collective farmer Ponomarenko's family received 6.2 tons of grain and 6,326 rubles in cash. K. Pakhomenko, a Stakhanovite, received 5 tons of grain and 5,120 rubles in cash. Most of our collective farm members received similar incomes.

A life of prosperity brings culture with it. The tsarist government did its best to foster chauvinism and dissension; it incited the Russians against the Ukrainians, the Ukrainians against the Jews, the Georgians against the Armenians, and so on. In the U.S.S.R., with its Socialist culture, a great and inviolable friendship and amity exists between the various peoples and nationalities. Russians and Ukrainians, Jews, Gypsies and Poles live and work in complete harmony in our collective farm.

Khalil Saitov is a Gypsy. He spent most of his life wandering over the steppes. His children were born in a cold, wind-beaten covered wagon. Now his family is happy and prosperous. Mikhail Piznoy is a Jew. He is in charge of one of our brigades and commands the respect and affection of all our members. His brigade has secured the high yield of 0.9 tons of grain per acre. Boody, a Moldavian,

was for many years a shepherd in the sun-scorched steppes; he worked for next to nothing for the kulaks. Now he is a well-to-do collective farmer, and is in charge of a section on our farm.

Some twenty-five years ago, before the Revolution, it was no easy matter to get permission to open a school in the countryside, and most of the children went without any schooling. Now we have plenty of schools. The kolkhoz also has a moving picture theatre for showing sound films, several clubhouses, a good library, a radio broadcasting station for local purposes and a power plant. This year the members subscribed to 24,000 rubles' work of books and periodicals. We have a maternity home, a nursery, a good public bath and a barber's shop.

The collective farmers' homes are lighted by electricity and comfortably furnished. Nearly 3,000 of our members have bicycles. The young people go in for sports (300 of our members have received the Voroshilov Badge for marksmanship), and are enthusiastic members of the club dramatic, singing and music circles. There are no illiterates in our farm. Eighty per cent of our members have had an elementary or secondary education, and 20 of the members have had a university education. Over 500 children attend the ten-year secondary school. Twelve of our young people have graduated in agricultural or industrial training schools.

Hundreds of people who formerly went unnoticed have developed into capable executives in government and public bodies. A. Pivovarov, formerly chairman of our kolkhoz, is now chairman of the executive committee of the District Soviet and has been awarded the Order of Lenin by the Government. N. Pikulsky is manager of the repair shop at our Stalin Machine and Tractor Station. P. Letugin took a post-graduate course at the Institute of Agricultural Economics and now occupies an important post in the People's Commissariat of Agriculture of the U.S.S.R. P. Ponomarenko is in charge of one of the biggest state farms in the Zaporozhye Region. I. Ivanov, a former member of our kolkhoz, is the chairman of a



district executive committee in the same region. The names of Feshchenko and Valovaya, brigade leaders outstanding for the big harvests they secured, are known far beyond the bounds of our region. Grigory Koshka, one of our shepherds, is an outstanding Stakhanovite, who gets letters from collective farms all over the U.S.S.R. He has achieved a record increase, over 140 lambs for every 100 ewes—in the size of his flock.

The collective farm system has opened broad prospects for the peasant woman both in production and in public life. It is helping to efface the distinction between town and country. Remoulding economic life in the villages, it is radically refashioning the people as well.

In February, 1939, our collective farm was awarded the Order of Lenin by the Government for its outstanding achievements.

## THE STATE FARMS

*By P. Lobanov*

PEOPLE'S COMMISSAR OF STATE FARMS OF THE U.S.S.R.  
MEMBER OF THE SUPREME SOVIET OF THE R.S.F.S.R.

OLD Russia was primarily a country of small-scale peasant agriculture. The great mass of the peasants held tiny plots of land while hundreds of millions of acres of the best land belonged to the royal family, the church, the nobility, and the kulaks, who exploited the poverty of the peasants to cultivate their estates. The only agricultural implements available to the peasants were primitive wooden ploughs and harrows that did little more than scratch the soil. Peasant farming before the Revolution was a constant struggle for meagre harvests, under the threat of drought and famine.

Agriculture in the Soviet Union presents a totally different picture. The peasants have pooled their resources in large-scale collective farms, the kolkhozes. Moreover,

6,350 machine and tractor stations have been opened—state enterprises through which the Soviet Government renders the collective farmers scientific and technical assistance. In 1938 there were 483,500 tractors at work in the fields of the Soviet Union, 153,500 harvester combines and hundreds of thousands of other complex agricultural machines. In addition to the collective farms, which are co-operative bodies of peasants working and owning the implements in common, there are large-scale state agricultural enterprises, state farms which are run on industrial lines.

The first farms were organized by the Soviet Government in 1918, but their rapid development began in 1928–9 when, on the initiative of Stalin, large state grain farms using modern methods were organized all over the country. By the spring of 1930, 143 state grain farms had been organized. After them came large-scale stock-raising farms.

There are state farms in all parts of the vast Soviet Union: in the steppes of North Caucasus, the Crimea, the steppes of Orenburg (now Chkalov) the Trans-Volga districts, and the spreading plains of Kazakstan and Siberia.

The history of the state farms is one chapter in the great campaign for the re-organization of agriculture, the development of large-scale Socialist farms. As a result of this struggle the Soviet Government broke the resistance of the enemies of the Soviet people, who tried to frustrate the development of state farms by sabotage. Hundreds of large state grain farms and stock-raising farms are now thriving in all parts of the Soviet Union and have become an abundant source of grain, meat, milk and other supplies.

In 1930 the state grain farms were supplying the country with 553,650 tons of grain. In 1933–7 the state grain farms and stock-raising farms, controlled by the People's Commissariat of State Farms, supplied the country with 9,136,600 tons of grain, 1,120,400 tons of meat, 4,095,000 tons of milk, and 65,500 tons of wool.

In order to put an end to kulak exploitation and save the peasants from hunger and poverty it was necessary to

show them in practice all the benefits and advantages of large-scale, mechanized Socialist agriculture. The state farms, equipped with up-to-date machinery and rationalized with the latest methods of agronomy and scientific animal husbandry, showed the peasants the advantages of large-scale Socialist agriculture. Thereby they played a great part in collectivization, the reorganization of peasant farming on modern lines.

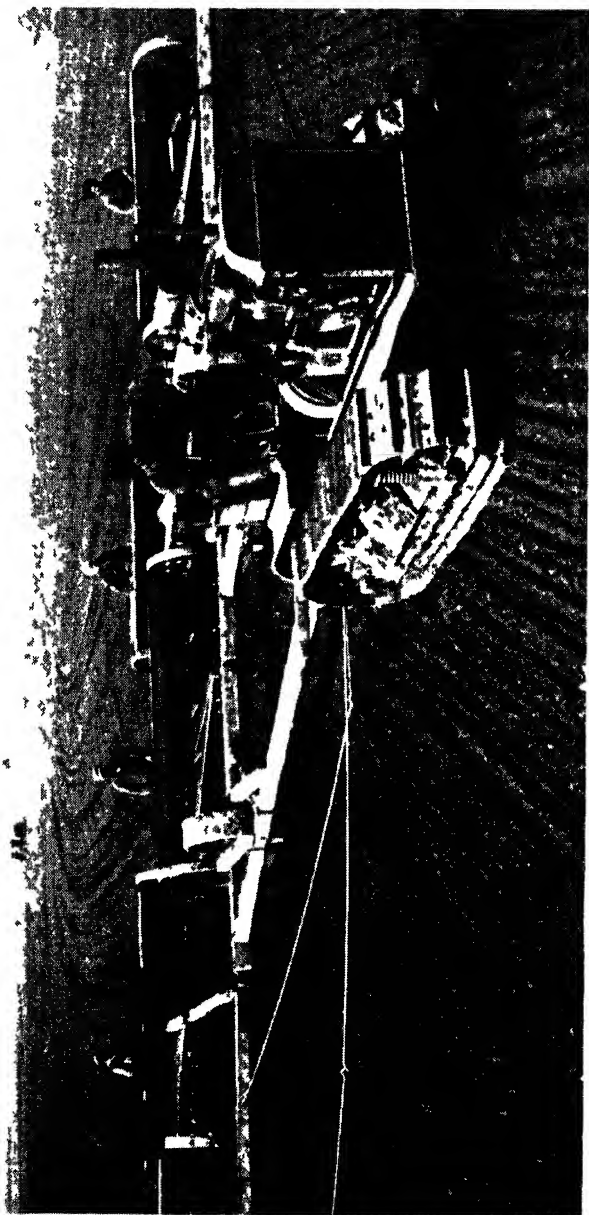
By January 1, 1939, the number of state farms in the U.S.S.R. had reached 3,957. They now occupy an immense area of 168 million acres. The majority of the state farms have been organized on land where tsarist Russia, with its backward agriculture, could make nothing grow. In other words, tens of millions of acres of land, previously uncultivated, have been brought under the plough. There are state farms in all the republics and regions of the U.S.S.R., even in localities where the population had previously been non-agricultural. Besides producing food-stuffs for the urban industrial centres—grain, meat, milk, butter, fruit and vegetables—the state farms supply raw materials for our industries—cotton, flax, wool, sugar beet, vegetable and essential oils, etc. There are also special state farms for breeding reindeer and various animals valuable for their fur, such as sables, martens, raccoons, and silver foxes.

The existing state farms are classified as follows:

Grain-growing	..	..	..	..	477	farms
Cattle-breeding	..	..	..	..	771	"
Pig-breeding	..	..	..	..	629	"
Sheep-raising	..	..	..	..	200	"
Growing cotton and other fibre crops	..	..	..	..	54	"
Growing special crops (tea, tobacco, etc.)	..	..	..	..	114	"
Fruit, vegetable and vine-growing	..	..	..	..	645	"
Studs	..	..	..	..	118	"
Reindeer-breeding	..	..	..	..	31	"
Poultry-raising	..	..	..	..	102	"
Suburban (chiefly for vegetables, dairy produce, and miscellaneous)	..	..	..	..	816	"



KIRGHIZID  
Irrigation Works



A TRACTOR DRIVER

The scope of state farming may be seen from the fact that the total sown area of the state farms in 1938 was 30,628,000 acres, and the total livestock of the state farms was 2,597,000 head of cattle, 1,830,000 head of hogs and 5,676,000 head of sheep.

Under the first two Five-Year Plans the state invested about 15,000 million rubles in the development of state farms and their technical re-equipment.

The state farms are powerfully equipped with machinery. The number of tractors, harvester combines, motor trucks and various farm machines is growing from year to year. The quality of these machines is constantly improving, old types of machines being replaced by modern and more powerful types. A good proportion of the tractors now in use on the state farms are of the large caterpillar type, while Diesel tractors and gas generator tractors are being introduced on a wide scale, and, with them, the giant harvester combine.

In the last ten years the number of tractors in the state farms has increased  $12\frac{1}{2}$  times, aggregating 1,751,800 horse power. In the state farms there are 26,000 harvester combines and 30,600 motor lorries. In the state grain farms 94.5 per cent of all work is now being done by mechanical traction while the harvesting is done exclusively by combines.

The wide use of machines on the state farms and collective farms has introduced new occupations in the countryside—tractor driving, combine operating, mechanics, lorry driving, which were unknown in the old Russian countryside. In order to satisfy this demand for skilled labour a great network of technical schools has been organized. Many of the schools are located directly on the state farms. Between 1931 and 1937 the state farms under the People's Commissariat of State Farms alone trained 200,000 tractor drivers, 52,000 combine operators, 25,000 assistant combine operators, 6,000 mechanics, and 27,000 foremen for grain farms and stock farms. The state farms run various schools and study courses to train skilled personnel not only for themselves but for the kolkhoz farms too.

The state farms employ great numbers of agronomists, engineers, animal breeding experts, and veterinary surgeons. These professions are taught in a large number of special agricultural institutes and colleges. Through the institutes and colleges under its jurisdiction, the People's Commissariat of State Farms has in the last five years trained 2,000 engineers, 2,600 agronomists, 7,500 animal breeding experts, 3,500 veterinary surgeons. Furthermore, large numbers of agricultural experts for the state farms have been trained in other institutes of education.

The leading workers in the state farms—the Stakhanovites—are making world records with their tractors, harvester combines and other machines.

The tractor driver Belenko, of the “Bataiskī” State Farm (Rostov Region), decorated by the government for his distinguished services, ploughed 5,965 acres in one season, while the tractor driver Kostenko of the Kropotkin State Grain Farm (Krasnodar Territory) ploughed 6,538 acres.

The tractor drivers Kopytko and Kovtun of the “Gigant” State Farm in North Caucasus, sowed 642 acres a day with 6 seeders hitched to a tractor of the caterpillar type.

During the harvest season of 1938 Bankin, a combine operator of the Privolensk State Cattle Farm (Rostov Region), harvested 6,290 acres of grain with a tandem of two combines, while Galunchikov, a combine operator of the “Podovinnoye” State Farm (Chelyabinsk Region) harvested over 3,700 acres and threshed 3,500 tons of grain.

Productivity is increasing in the state stock-raising farms also.

In 1938, for instance, Ulyana Barkova of the state dairy farm “Karavayevo” (Yaroslavl Region), got 8.8 tons of milk per cow. Kuznetsova of the “Kurkino” State Dairy Farm (Vologda Region) has reared over 1,000 calves without losing a single one. Every year, Lavrishko, the grazier of the Proletarsky Sheep Farm, North Caucasus, has 150 new lambs for every hundred ewes.

Modern machinery efficiently used has greatly increased the productivity of labour on the state farms and their output. In 1938 the state farms supplied the state with almost ten times more grain and meat and five times more dairy produce than in 1929. The Soviet Government is taking good care that the workers in the state farms should have proper working conditions and living conditions.

The earnings of the regular workers in the state farms have increased more than two and a half times since 1932. In 1932 the annual earnings of the regular workers averaged out at 910 rubles, in 1938 the average was 2,396 rubles (an increase of 163 per cent). This increase has been particularly great in the case of the workers employed on the pig breeding farms: from 777 rubles a year to 2,499 rubles—a more than three-fold increase. In the same period the workers in the state sheep farms increased their earnings by 169 per cent (from 847 to 2,278 rubles a year), the workers in the state dairy and meat farms—by 160 per cent (from 854 to 2,219 rubles a year) and the workers in the state grain farms by 128 per cent (from 1,201 to 2,742 rubles a year).

There has been a considerable increase in recent years in the wages of tractor drivers, combine operators, milkmaids, and other skilled workers. In August 1935 tractor drivers earned an average of 216 rubles a month during the harvest. In August 1938 the average was already 383 rubles (an increase of 77 per cent). In April 1935, milkmaids earned an average of 96 rubles a month. In 1938 they earned 174 rubles (an increase of 81 per cent).

The Stakhanovites are greatly increasing their earnings. For instance, the tractor driver Babich of the Krivoi Rog State Grain Farm in six months of 1938 reached 5,500 rubles. The milkmaids of the "Lesniye Polyany" State Dairy Farm (Moscow Region) Markina and Rindina earned from 800 to 1,000 rubles a month.

The state farms have an eight-hour day. Every worker has an annual vacation with pay. Many workers spend their vacations in sanatoria and rest homes at the expense of the state.



Many state farms are real townships, populated by thousands of people. Every state farm maintains nurseries, maternity homes, hospitals, clinics and schools, all expenses being borne by the state. There is little to distinguish life in the state farms from the life of the workers in the towns. In the "Electrozavod" State Grain Farm (Chkalov Region), for instance, the workers have a club, a moving picture theatre, a large library, 9 elementary and secondary schools, courses in agricultural training, a hospital with 35 beds, a clinic, a drug store, nurseries, etc. One hundred and thirty comfortable and well-designed houses have been built for the workers. All the apartments have electricity and wireless installations.

Who are the men who manage these great enterprises?

They are engineers and agronomists, most of them former workers, collective farmers, agricultural labourers who came to the state farms to perform unskilled labour and acquired experience and a preliminary training which they later continued in special schools and colleges.

Here is the story of Denis Pavlovich Drieg, the assistant director of the Chkalov large-scale state grain farm (Zaporozhye Region). The son of a farm labourer, he began at the state farm as a shepherd. After completing short courses in tractor driving he began to work as a tractor driver, then became a combine operator. Later on he graduated from the Institute of Mechanization. He has been decorated by the government for his distinguished work.

Or another example—Piskarev, the director of the Ust-Medveditsk State Cattle Farm (Stalingrad Region) the son of a workingman. His career can be stated briefly: he worked in the engine room of a Volga steamer, then at a corn mill. Later he became an artificer and gave up his trade to study at an agricultural institute. Eventually he became the technical director of the October State Farm (Voronezh Region). Now he directs a great stock farm.

Many state farms are already models of good organization and efficiency.

One of the oldest and best-known state farms, not only

in the U.S.S.R., but also to people abroad, is the "Gigant" Grain Farm in the steppes of the North Caucasus. In the last two years it has averaged about 0.8 tons of winter wheat per acre from an area of 39,500 acres. This farm also has 3,200 head of cattle, 5,400 sheep, 700 pigs, 260 horses. In two years it has produced 10,500,000 rubles' worth of foodstuffs and made a profit of 2,785,000 rubles.

The "Kirov" State Grain Farm, situated in an arid zone of Kazakhstan which has a rainfall of only 220 mm. a year, now gets good harvests regularly. In 1938 it averaged 0.8 tons of grain per acre from an area of 61,750 acres.

In the "Karavayevo" State Dairy Farm the yield of milk in 1938 was 6.15 tons per cow from 251 cows. Almost half of the livestock are cows which have calved for the first and second time and give an unusually high yield of milk for their age. Since her second calving, for instance, the cow "Blagodat" has yielded 9 tons of milk. The record making cow "Poslushnitsa" which was reared on the same farm yielded 16.3 tons of milk during her sixth lactation (1937 and the beginning of 1938).

The Proletarsky Sheep Farm has 22,000 head of *précoce* (early maturity) sheep. In 1938, 122 lambs were obtained per hundred ewes, and in 1939, 147 winter (February) lambs per 100 ewes were obtained in six flocks. This state farm shears an average of 9.9 lb. of wool per year per sheep. All the ewes on this farm have been subjected to artificial insemination for some years past.

Another pedigree sheep farm, the "Bolshevik" (Orjonikidze Territory) has 34,000 sheep of the "Soviet Rambouillet" breed, a cross between the local merino and the American Rambouillet. The Soviet Rambouillet combines the weight of the American Rambouillet with a heavy fleece. The best of them weigh 264 lb. and higher and yield 35 lb. of wool at a shearing. The average fleece per sheep on this state farm weighs 13.9 lb. In 1938 the state farm sold 6,000 pedigree breeders to the collective farms.

The achievements of the state farms are very considerable. But even greater tasks face them during the Third Five-Year Plan period.

One of the aims of the Third Five-Year Plan for the Economic Development of the U.S.S.R. (1938-42) is, by continuing the mechanization of agriculture, to increase the productivity of labour in the state farms and make thriving concerns of them all.

## MACHINE AND TRACTOR STATIONS

*By A. Oskin*

ORDER OF LENIN. HARVESTER COMBINE OPERATOR. MEMBER  
OF THE SUPREME SOVIET OF THE U.S.S.R.

ON November 8, 1917, one day after the establishment of Soviet power in Russia, the Council of People's Commissars issued its decree on the land. Under this law private property in land was abolished for all time and the land was declared state property, the property of the people. More than 370 million acres of land formerly comprising the estates of the landed proprietors, the monasteries and the royal family were added to the peasants' holdings.

... The years passed. The Soviet Union completed two Five-Year Plans of economic development. In the space of ten years (1929-1938) large-scale industry in the U.S.S.R. increased its output by almost 400 per cent. A new array of mighty industrial plants, mills and factories arose throughout the country.

The Rostov Agricultural Machinery Plant alone produces more machines per year than were produced by all the agricultural machinery plants of tsarist Russia. Great tractor works were built at Stalingrad and Chelyabinsk, plants for the production of harvester combines were opened at Saratov, Zaporozhiye and Rostov. In machine building and tractor production the

U.S.S.R. advanced to first place in Europe and second in the world while in output of harvester combines it rose to first place in the world.

Thanks to large-scale Socialist industry the Soviet Union was able to reorganize agriculture on completely new lines. By now, 18,800,000 peasant households, 93·5 per cent of the total number, had joined collective farms. The Soviet Government supplied the collective farms with hundreds of thousands of tractors and harvester combines, a vast number of motor lorries, tractor-drawn farm implements and other machines.

This equipment, the last word in technical progress, is concentrated in the Machine and Tractor Stations (M.T.S.), which have become the principal state enterprises in the countryside, servicing over 250,000,000 acres of collective farm land.

In 1930 the U.S.S.R. had 158 Machine and Tractor Stations. By the beginning of 1939 their number had increased to 6,350, a great network extending from the White Sea to the Black Sea, from the Western frontiers to the Far East. In 1938, the Machine and Tractor Stations serving the collective farms had 130,000 harvester combines, 160,000 motor trucks, 105,000 threshing machines and 394,500 powerful tractors, and their number is steadily increasing. In addition there are hundreds of thousands of other machines and mechanical appliances in the Machine and Tractor Stations as well as a large number of well-equipped repair shops. The stations are financed by the state, and have no farms of their own. In 1938 alone the state assigned 7,000,000,000 rubles to the Machine and Tractor Stations. The work of each M.T.S. is planned in conformity with the work of the collective farms which it serves and it is conducted on the basis of a standard contract with the collective farms in its area.

Under this standard contract, which is legally binding, the particular M.T.S. undertakes to do certain work of a definite quality by a definite date in the given collective farm. On the other hand, the collective farm has specific agrotechnical and other duties to perform. It must do

part of the work, mainly of an auxiliary nature, and provide draft animals for hauling supplies of fuel for the tractors, and other purposes.

Through the Machine and Tractor Stations the state plans the process of production and the introduction of the latest scientific farming methods on a wide scale, thus ensuring big harvests regularly.

The work performed by the Machine and Tractor Stations is paid for in kind by the collective farms according to the rate fixed for each class of work. Thus, for threshing, the collective farm gives the M.T.S. from 4 to 6 per cent of the grain threshed by M.T.S. threshers. The entire proceeds of these stations is handed over to the state.

The Machine and Tractor Stations are well staffed with engineers, mechanics, agronomists, expert bookkeepers and accountants, land reclamation experts, hydraulic engineers and other trained men. Here we might add that the Machine and Tractor Stations are bound by contract to train a regular contingent of the collective farmers for skilled work.

During eleven months in 1938 the amount of tractor-ing performed in the collective farms by the Machine and Tractor Stations came to the staggering figure of 481,150,000 acres of conventional ploughing.<sup>1</sup> Collective farm harvests have increased correspondingly. In tsarist Russia the harvest of grain crops never exceeded 80 million tons, while in 1937 the grain harvest in the U.S.S.R. reached 111,500,000 tons.

Before the Revolution the cultivation of tea, citrus fruits, soya beans, kenaf, hemp, sesame, and rubber plants was unknown in the Russian countryside. Now, with the help of the Machine and Tractor Stations the collective farms are making splendid progress in the cultivation of these and many other plants.

The concentration of machines in the Machine and Tractor Stations and the merging of the peasant farms into collective farms controlling vast areas of land have made

<sup>1</sup> I.e. Ploughing plus all forms of tractor work (sowing, harvesting, etc.).

it possible for machinery to be used in agriculture to the utmost advantage. In 1938 the average area farmed per M.T.S. tractor was 1,015 acres.

Stakhanovite tractor drivers cultivate as much as 5,000 acres with wheel tractors and up to 12,500 acres with caterpillar tractors.

The tractors on the collective farm fields do not work singly, but in teams consisting of a number of tractors with the requisite outfit of appliances and agricultural machines. The work of these teams is directed by mechanics and agronomists. Skilled men from the M.T.S. repair shops see to it that the machines are kept in good order. The M.T.S. tractor teams are attached to a definite collective farm for the whole season to complete all the work undertaken in the contract.

Through the Machine and Tractor Stations the collective farms are also served with harvester combines which have become the principal harvesting machines in the U.S.S.R. harvesting about one-half of the total collective farm area.

In one season, harvester combine operator Borin of the Steinhardt Machine and Tractor Station, in the Krasnodar Territory, harvested 4,940 acres of land under cereals, an average of 185 acres a day. 2,950 tons of grain passed through his bunker. Thanks to such thorough mechanization, farm jobs take much less time than formerly, and the collective farmers are able to get the sowing and harvesting done quickly without losses.

Prokhorov and Susopatieva of the Red October Collective Farm, Vozhgal District, Kirov Region tell us what a difference the Machine and Tractor Stations have made.

"In the old days the peasants had to sweat blood for every pood of grain. We got from 300 to 375 pounds from the acre. Now we have the Machine and Tractor Station to help us. In  $1\frac{1}{2}$  hours a tractor ploughs  $2\frac{1}{2}$  acres, and a combine harvester harvests  $2\frac{1}{2}$  acres in half an hour. The yield per acre has increased to 1,500 and 3,000 pounds."

The figures for 1937 show that collective farm labour is

six times more productive than was farm labour in tsarist Russia. Up-to-date mechanization is making agricultural labour more and more like industrial labour.

The collective farms have their own electric power stations, clubs, theatres and moving picture houses, laboratories, schools, nurseries, kindergartens, hospitals, athletic fields and wireless centres. Farm life is rapidly coming up to urban standards.

Thousands of peasants' sons and daughters are studying in universities. Last year alone agricultural colleges gave the Machine and Tractor Stations and collective farms 12,732 experts in agronomy, veterinary science, scientific animal husbandry, irrigation, hydraulic land reclamation, mechanics and surveying. Every year about a million persons take courses in mechanics.

In the village of Moskovskoye, Izobilensk District, Orjonikidze Territory, there are five schools with a total attendance of 1,600 children and a teaching staff of 43. There are six stores, a hospital, a clinic, a drug store, a club with a library, a central school for collective farmers from the surrounding districts and, of course, a Machine and Tractor Station—the industrial centre of the new, collective farm village.

The number of professional people in Moskovskoye is constantly increasing. Two local peasants have become professors, seven—doctors, thirty-six—teachers, twelve—agronomists, eight—engineers, and ten hold commissions in the army. Before the advent of collectivization the two brothers, Michael and Alexei Tolin worked as farm hands for kulaks. Now Michael is a colonel in the Red Army and Alexei is a doctor. Ivan Chaiko, formerly a poor peasant, is now a scientist and lectures at a college in Leningrad.

Or take another village, Koltsovka, Vurnarsk District, Chuvash Autonomous Soviet Socialist Republic. Not so long ago the chairman of the local collective farm was Korotkov. He proved to be a capable executive and was promoted to a higher post. Now he is the People's Commissar of Agriculture of the Chuvash Republic.

There are many villages like Moskovskoye and Koltsovka in the U.S.S.R. Collective farmers become People's Commissars, tractor drivers become academicians, milkmaids become members of the government. Such are the opportunities open to all in the collective farm villages.

In the old days there was no mass training of technical personnel for work in the countryside, there were no schools for young talent like the machine and tractor stations which are now training skilled labour for our socialist farms. New figures have appeared on the rural scene, people with semi-industrial professions formerly unheard of in the countryside. By the most modest estimate the Soviet countryside has 1,500,000 tractor drivers and harvester combine operators, 124,000 lorry drivers, 240,000 collective farm chairmen, over 535,000 field foremen and approximately 264,000 stockfarm managers and foremen. This vast army of skilled people is working hard to increase the productivity of farm labour. In its front ranks are the Stakhanovites, people who know their work to perfection, people who have introduced new methods and efficient organization of work.

Take the Stakhanovites of the Kaganovich M.T.S. in the Krasnodar Territory. At this station, which employs 25 tractor teams, there are 200 tractor drivers. A hundred and forty-eight of them fulfil their assignments 200 per cent and over. Five of these teams consist entirely of Stakhanovites. Each tractor driver in these teams ploughs 18 acres with three-coulter ploughs to a depth of 7.9 inches. And the assignment is 8.6 acres.

The assignment for harrowing is 98 acres but these tractor drivers do 195.5 acres. The assignment for scarifying is 42 acres, they do 138.8 acres. The days' assignment for combine-harvesting is from 19 to 22 acres. Some of our Stakhanovite combine operators harvest 1,730 acres of grain, in the 22 days of the harvesting season.

Thousands of Soviet combine operators harvest from 2,500 to 5,000 acres in one season.

The Stakhanov movement in the countryside is advancing by leaps and bounds.



Millions of peasant families receive from 16 to 25 and more tons of grain a year in their collective farms. In addition to this income in kind the collective farmers receive cash. Exceptionally large money incomes are received by the collective farmers in the cotton, flax, stock-raising, sugar beet-growing and citrus fruit districts.

Before the advent of collectivization, Gerassimov, now a member of the Dimitrov Collective Farm in the Nari-manov District, Stalingrad Region, was a poor man. In the collective farm he became an expert farmer, a Stakhanovite. In 1938 his share of the collective farm income was 14,000 rubles plus several tons of grain, vegetables and other produce.

In 1938 in the Khanlar District of the Azerbaijan S.S.R. the Thaelman Collective Farm, consisting of Germans, received 4,450,000 rubles for its produce. The family of Robert Schmidt received 7,500 rubles in cash and 4,700 rubles worth of farm produce. In 1938 this collective farm spent 778,000 rubles on building extensions and cultural service for the collective farmers. There are tens of thousands of collective farms like this one in the U.S.S.R.

In 1938, with my brother Arkhip, a combine operator like myself, I harvested the collective farms in the Ilek District of the Chkalov Region. In 41 days the two of us together harvested 12,933 acres. Our earnings came to 42,315 rubles.

More and more collective farms are getting the benefit of M.T.S. service, and increasing their incomes beyond the million ruble mark. In the Nikolaev Region in the Ukraine 35 collective farms have become millionaire farms. In the Temruk District, Krasnodar Region, 20 collective farms each receive an income of over a million rubles. In the Ferghana Region, Uzbek S.S.R. in 1938 the number of millionaire collective farms rose to 320.

Under the collective farm system life in the villages of the U.S.S.R. has become prosperous and cultured. Socialist industry and collectivized agriculture complement each other, each assisting the other to attain further progress.

## LIVESTOCK RAISING

*By Y. Liskun*

MEMBER OF THE ACADEMY OF SCIENCES OF THE U.S.S.R.  
ORDER OF LENIN

THE Great October Socialist Revolution which transformed the entire economic life of the country has brought about a material change in the sphere of stock-raising as well. In tsarist times stock-raising was practically the most backward branch of agriculture in Russia. The average annual yield of milk per cow was about 1,400 lb., the average annual yield of wool per sheep amounted to 2.86 lb., and the average carcase of beef equalled 220.5 lb. There was no "demand" for the science of animal husbandry in tsarist Russia; and the only institution that dealt with the scientific problems of animal husbandry was the Zootechnical Laboratory founded by the Ministry of Agriculture in 1905.

At the time of the Revolution in 1917, there were altogether three colleges of agriculture maintained by the state. Three more schools of agriculture, which offered a higher course of study, were maintained by public organizations.

In the small and scattered peasant farms of tsarist Russia stock was raised only for consumption and to supply manure. Therefore, while the number of head of stock was fairly large, stock raising played rather a small part in the economic life of tsarist Russia. Under such conditions science, naturally, played an insignificant role. In the whole of tsarist Russia there were 74 livestock experts with a scientific training. The budget of all the scientific institutions working this field totalled about 100,000 rubles.

An entirely different situation obtains in the U.S.S.R. at present. The problems of improving the stock and raising its productivity are dealt with in eighteen large scientific research institutes, 78 regional and republican

Zootechnical stations with 296 branches in various parts of the country, and more than a thousand small laboratories functioning in collective farms. The budget of these scientific research institutions amounts to about 51 million rubles a year.

In addition to this, fifty animal husbandry departments carrying on scientific research work have been organized in universities and other higher educational institutions.

The existence of a close contact between the science and practice of stock-raising gives us the assurance that in the very near future we shall be able to direct at will all the processes of reproduction of the herd of farm animals, as well as the output of the produce of stock-raising. The magnitude of the problem may be appreciated if it is borne in mind that the Soviet state sets itself the aim of providing a supply of the products of stock-raising that will fully meet the requirements of the population.

The scientific agricultural institutions of Soviet Union have mastered, during the brief period of their work, all that is known to world science in the sphere of animal husbandry. Nor is this knowledge confined to scientists alone. Tens of thousands of Stakhanovite workers engaged in stock-raising employ scientific methods in their work and display creative ingenuity in their application. As a result, they have succeeded in raising the productivity of native breeds to a level which was formerly considered unattainable.

An annual yield of over 3.5 tons of milk per cow; a progeny of pigs weighing more than 1.5 tons on hoof from one sow; an average of over 11 lb. of wool per sheep of the merino-Précose, Rambouillet and native merino breeds; a daily increase in the weight of porkers amounting to 3.5 and even to 4.5 lb. per head; 165 and more eggs per laying hen a year; over 265 lb. of honey per beehive; 100 per cent calving of cows and foaling of mares; 100 per cent preservation of calves and colts; 24-26 piglings per sow; 135 lambs per 100 caracul ewes, 265 lambs per 100 Romanov ewes and more than 140 lambs per 100 merino

ewes—such are some of the results obtained by an intelligent application of the achievements of world science in the sphere of animal husbandry.

Soviet achievements in every branch of the stock-raising industry are either on a par with the world records or surpass them. We may mention the record of "Poslushnitsa," a cow producing 16 tons of milk a year (Karavayevo State Farm, Yaroslavl Region); or the records of some Soviet racehorses, such as that of "Oulov" which covered 0.99 miles in 2 minutes 3.4 seconds, and 1.98 miles in 4 minutes 20.7 seconds, that of "Pye-tushok," a Russian-American breed, which covered 0.99 miles in 2 minutes 3.5 seconds, that of "Podagra" which covered 1.98 miles in 4 minutes 21.9 seconds, etc.

The breeds of animals are being improved by the method of crossing the native types with pedigree stock, as well as with the better local breeds. The state farms and collective farms are thus evolving new breeds ensuring an unprecedented productivity.

Soviet science has accomplished a great deal of work in the matter of selecting the breeds that will best serve the purpose of improving the herd in the Soviet Union. At present we have a scientifically elaborated plan for the proper territorial distribution of the various breeds that are used to improve the country's livestock.

In order to accelerate the process of improving the stock with the best thoroughbred producers, Soviet science has perfected the technique of artificial fertilization of sheep, cattle, hogs, horses, rabbits, poultry, and even bees. A number of special apparatus have been designed, and the methods of artificial fertilization have been so simplified that every shepherd can apply them. The sperm of one ram is used to fecundate 5,000, and in some instances as many as 10-12,000 ewes in a season; the sperm of one pedigree producer serves to fecundate 1,200 mares or 1,000 cows.

Important contributions to the science of artificial fertilization have been made by O. Neuman, V. Milovanov and a number of other prominent scientists.

Over fifty million head of livestock have already been obtained in the U.S.S.R. by the application of the method of artificial fertilization, which makes it possible greatly to speed up the improvement of the herd and the introduction of new breeds. The further perfection of the methods of artificial fertilization will open up still greater possibilities along these lines.

Soviet science has been able to register important achievements as the result of experiments in cross-breeding with a view to combining the best qualities of a number of breeds in one new breed. The most noteworthy achievements in this sphere are those of M. Ivanov, member of the Academy of Sciences of the U.S.S.R. He obtained a new breed of sheep—the Askanya Rambouillet—combining the best qualities of the American and native Rambouillet. The Askanya Rambouillet is already superior to the American breed in point of hereditary transmission, wool yield and weight on hoof.

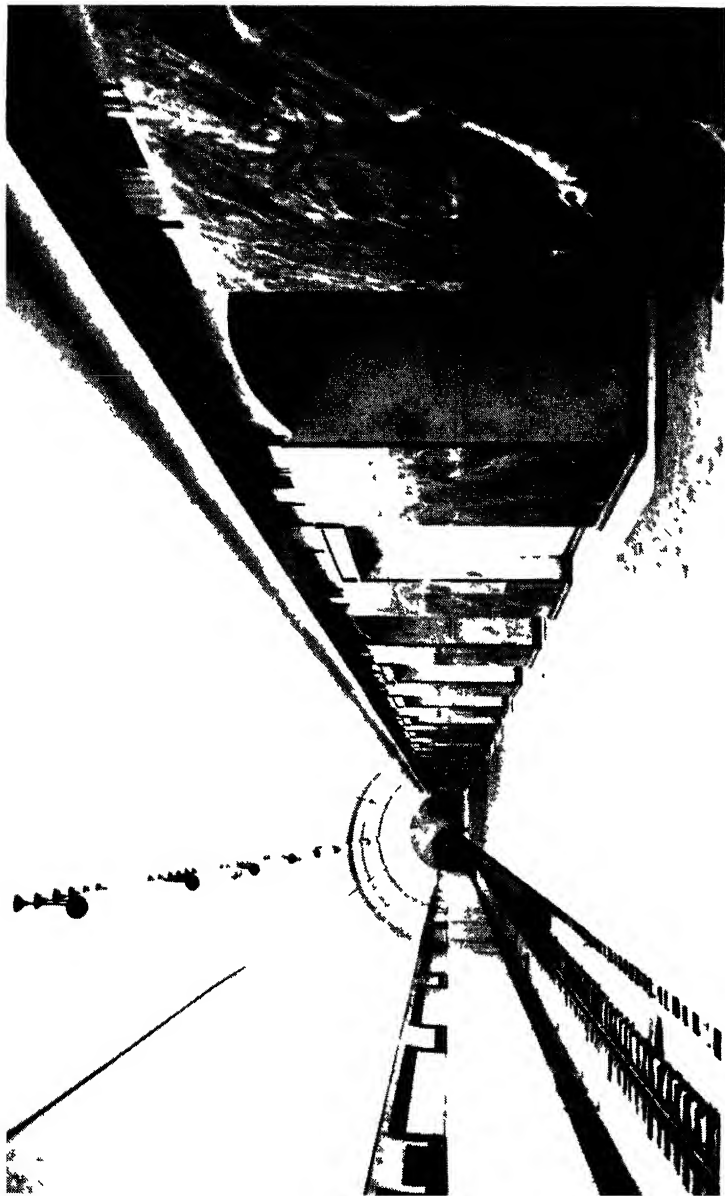
Academician M. Ivanov has also produced a new breed of hog—the large white Askanya—combining the qualities of the native southern Russian variety and those of the large white English breed. The new breed is even somewhat superior in quality to the large white English hog, and at the same time it is better adapted to the conditions of southern Ukraine.

Soviet science has achieved considerable success in elaborating the methods of obtaining new breeds. By applying these methods, livestock expert Filyansky, of the Bolshevik State Farm, has produced a new breed of sheep—the Caucasian Rambouillet. The livestock experts of Kazakhstan have produced a new breed of sheep, the “curducce” combining the fleece of the merino with a heavy tallow protuberance (steatopyga) on the rump, which is of great advantage in desert and semi-desert conditions.

By applying the Darwinian theory in practice, Soviet animal breeders have demonstrated the great potency of environment and external conditions, in the form of feeding and maintenance, as a means for the transforma-



MACHINE AND TRACTOR STATION



A MOSCOW METRO STATION

tion of animals. The author, for instance, has succeeded in proving that with proper feeding and good tending the native Kalmyk and Kirkhiz cattle display an early maturity which makes these native breeds practically akin to shorthorns and Herefords.

At the age of two years and four months, the young that have been brought up according to my method easily reach a weight of 575-615 lb., of a quality which is on a par with the meat of the best breed of beef cattle. This method has now been introduced in 79 large state farms.

Soviet science is studying the chemical composition and nutritive qualities of various kinds of feeds produced under various climatic, soil and farm conditions. Particular attention is being paid to the mineral ingredients of feeds and fodder. Soviet science is also considering and elaborating the hypothesis of Academician V. Vernadsky to the effect that feeds contain elements of rare soils which apparently play an important role in the nourishment and development of animals, as well as of man.

The contributions of Soviet science in the sphere of animal husbandry include a number of new works dealing with the appraisal of the biological characteristics of feeds. Professor A. Solun has succeeded in establishing the vital importance of the presence of vitamin "A" in feeds for the proper nourishment of animals with young. Feeding mares products with the proper vitamin "A" content safeguards them against miscarriage and insures a strong and enduring progeny. Similar results have been obtained in the case of sheep. Particular success has been obtained in demonstrating the effect of vitamin "A" on the development of the young of the merino sheep.

The study of the biological characteristics of feeds will enable us to make up proper feed rations and thus to solve the problem of proper feed combinations.

This problem, as well as the question of mineral nourishment, is being successfully dealt with, among others, by the Zootechnical station in the city of Pushkin, Leningrad Region, working under the direction of Professor M. Dyakov.



By changing the methods of the care of animals and adapting them to the individual peculiarities of the various types of livestock, the Stakhanovites of the livestock industry have succeeded in obtaining considerably higher average rates of productivity and have laid the foundations for a new and higher level of scientific stock-raising.

One of the greatest achievements of Soviet science is its close contact with production. This contact bids fair to bring about exceptional results. Whole districts are at present vying with each other in a spirit of socialist emulation for a higher productivity of stock-raising. The collective farmers of the Ramensky and Lukhovitsky Districts, Moscow Region, have already achieved a milk yield of three tons and more per cow.

By applying scientific methods, the Soviet stock-raising industry will undoubtedly succeed in the near future in materializing all the vast possibilities offered by stock-raising carried on on a large scale and according to plan.

It must also be pointed out that the state plan for the development of stock-raising, which is drawn up for every year on a strictly scientific basis, is in itself a great achievement. It was as a result of planning and of the struggle for the fulfilment of the plans that in the five years 1933-8 the number of cattle increased by 64.6 per cent, the number of sheep and goats increased by 104.2 per cent, and that of hogs by 152.9 per cent. In the same years the number of cattle in fascist Germany diminished by 659,000 head. The increase in the number of sheep in the Soviet Union in the one year 1937 alone amounted to twice the entire flock of sheep in Germany. The number of sheep in the U.S.S.R. increased in 1937 by 10,700,000 head, whereas the total number of sheep in Germany in 1937 amounted to 4,683,569 head.

Stock-raising in the U.S.S.R. made further strides in 1938. In that year the number of horses in collective farms increased by 8 per cent and that of colts by 9 per cent; the number of cattle increased by 6 per cent, that of hogs

by 7 per cent and that of sheep and goats by 19 per cent.

These are rates of growth of which no other country in the world can boast.

## RAILWAYS

*By V. Obraztsov*

ORDER OF LENIN. MEMBER OF THE ACADEMY OF SCIENCES  
OF THE U.S.S.R. MEMBER OF THE SUPREME SOVIET OF THE  
U.S.S.R.

THE vast territory of the Soviet Union stretches from the Black Sea to beyond the Polar Circle, from the Gulf of Finland to the Sea of Japan. The wealth of the country multiplies with every passing year. New towns, industrial centres, mines and factories spring up in various parts of the Soviet Union. Deposits of gold and other rare metals are discovered in its mountain regions. The collective farms and state farms yield ever increasing harvests.

The importance of the railway system for the U.S.S.R. can be compared with the importance of the mercantile marine for Great Britain. The part played by Soviet railways in the general life of the country is steadily increasing. The rapid growth of industry and agriculture, the development of new regions and the strengthening of the country's defence powers require a highly efficient railway service and the Soviet Government is devoting much attention to developing and securing the smooth running of the nation's railways. In recent years the railway system has advanced to one of the foremost places in Soviet economic life.

The Soviet Government received a meagre heritage from the tsarist regime. War and intervention led to the destruction of some 4,500 railway bridges with a total length of over 60 miles. The Murman railway, the Amur

railway and other lines, construction of which was begun during the World War, were never brought to completion by the tsarist government. Practically no repair work was done for seven or eight years, railway ties were not changed and the roadbed was not renovated. Thousands of miles of lines, numerous water-towers and station buildings were reduced to ruins. Dilapidated cars and battered locomotives filled the sidings of railway junctions. Traffic declined heavily. Average daily car-loadings fell from 27,400 in 1913 to 6,200 in 1918, which was only 22.8 per cent of the 1913 figure. During the same period the volume of traffic declined from 40,900 million ton-miles to 8,700 million ton-miles.

It should be added that of the 43,798 miles of railways in tsarist Russia in 1913, over 7,000 miles were ceded to Poland, Lithuania and other border states. The U.S.S.R. was left with 36,300 miles of line.

The Soviet Government left no stone unturned in its efforts to revive the railway system without resorting to foreign loans.

The revolutionary enthusiasm of the masses, the splendid response of the railway workers to the appeal of the Soviet Government, their labour enthusiasm and improved working conditions made it possible to surpass the pre-war volume of traffic by 1926-7.

Car-loadings increased steadily. In 1913 average daily carloadings amounted to 27,400 cars; in 1918 this figure dropped to 6,200 but rose to 28,800 in 1927. Freight traffic increased at an even greater rate. In 1913 the volume of freight traffic amounted to 40,900 million ton-miles, in 1918 it dropped to 8,700 million ton-miles but reached 51,200 million ton-miles in 1927 and has continued to advance at an even higher rate in the subsequent years.

The Soviet railways experienced a particularly rapid growth in the period between 1928 and 1937. In 1928 the Soviet Government adopted its First Five-Year Plan for the economic development of the country which laid down a definite programme of expansion for each year. This

plan was fulfilled ahead of schedule. The Second Five-Year Plan (1933-7) was likewise fulfilled successfully. In 1938 the Soviet Union began the fulfilment of its Third Five-Year Plan which will be completed in 1942.

The Five-Year Plans stipulate definite programmes for each branch of industry and agriculture. Every factory, mill, railway and depot is given a specific programme for the five-year period. The nation judges the quality of work of industrial establishments and their general efficiency by the fulfilment of their production plans. In this way the work of every enterprise is under the constant control of the people and the fulfilment of production schedules becomes a matter of honour for the workers of every factory.

The planned development of economy has led to a marked improvement in the operation of the railways. By the end of the First Five-Year Plan period average daily carloadings grew to 51,400 and to 89,800 by 1937. By the beginning of the Third Five-Year Plan period car-loadings on Soviet railways were over three times as high as before the First World War.

The volume of freight shipped increased by leaps and bounds—from 156,200,000 tons in 1928 to 267,900,000 tons at the end of the First Five-Year Plan period and 517,300,000 tons in the last year of the Second Five-Year Plan period. Soviet railways transported almost four times as many passengers in 1937 as in 1928.

Coal, oil, ore, and metal account for 42 per cent of the aggregate volume of freight traffic. Taking the figures for 1928 as 100, shipments of coal and coke amounted to 383 per cent in 1937, ore to 435 per cent, metal to 460 per cent and timber to 270 per cent. These figures testify to the tremendous development of industry in the Soviet Union.

The freight density of Soviet railways exceeds that of any other country, as may be seen from the following table:

*Traffic per mile of line in operation (in ton-miles)*

		1913	1929	1936	1937
U.S.S.R.	.. ..	689,000	909,000	2,416,000	2,589,000
Germany	.. ..	788,000	944,000	722,000	—
Great Britain	.. ..	—	589,000	514,000	—

Such is the progress made by the Soviet railways in the last ten years.

It must be pointed out that the radical reconstruction of the railway system began actually in 1935 with the appointment of L. Kaganovich to the post of People's Commissar of Railways. Since then the rolling stock of Soviet railways has been replenished by the introduction of two new types of powerful locomotives—the "FD" (named in honour of Felix Dzerzhinsky) for freight traffic and the "JS" (Joseph Stalin) for passenger traffic. These locomotives exceed the old "EM" and "SU" type locomotives by 50 per cent in traction power. The "FD" and "JS" locomotives are the first in the U.S.S.R. to be equipped with mechanical stokers.

The introduction of Diesel-electric locomotives, which were unknown in pre-revolutionary Russia, marks a great step forward in Soviet railway engineering. Diesel-electric locomotives of the "E-EL" and "VM-20" (V. Molotov) type have proved very efficient and are being used extensively on the Central Asiatic railways which pass over arid country.

Great progress can also be recorded in the electrification of the railways. This work was facilitated by the fulfilment of the national electrification plan adopted by the Soviet Government on Lenin's initiative. There were no electric railways in Russia prior to the Revolution. The first electric line was built in 1926; it was a suburban line between Baku and Sabunchi. At present the U.S.S.R. has 1,116 miles of electrified railway, of which 198 miles are suburban lines and the remainder trunk lines.

The introduction of electric traction necessitated the construction of high-power electric locomotives. This problem was solved by Soviet industry, which has provided the railways with the "VL" (V. Lenin) electric locomotive for passenger and freight traffic, the "SS" locomotive for freight traffic and the "PB" for passenger traffic. All these locomotives use 3,000 volt direct current. The "PB" locomotive can develop a running speed of 87 miles, the "VL" 53 miles and the "SS" 43 miles per hour.

The latest innovation in Soviet railway technique is the new "SO" (Sergo Orjonikidze) condenser locomotive. The condensing installation of this locomotive converts the steam discharged by the cylinders into water to be used again for steam. The original water supply can pass through the condensation process from 10 to 13 times, providing a steady flow of pure distilled water for the boilers. The "SO" locomotive can run from 620 to over 1,000 miles without taking water. The importance of this locomotive is especially great in arid districts and where water is of poor quality. Another feature of the condenser locomotives is that it reduces fuel expenditure by 15 to 20 per cent.

The number of condenser locomotives in use on Soviet railroads is steadily increasing. In 1938 alone Soviet plants built 406 "SO" condenser locomotives as compared with 399 built during the entire First Five-Year Plan period. Other types of locomotives are also being fitted with steam condensation installations. The Voroshilovgrad Locomotive Works has produced a new type of "FD" condenser locomotive, the largest of its kind in the world.

The Kolomna Locomotive Works has produced a new type of locomotive, the 2-3-2, with a running speed of 93 miles per hour; a similar locomotive has been built by the Voroshilovgrad Works with an even higher running speed (112 miles per hour). The Kolomna locomotives are used on the Red Arrow Moscow-Leningrad express.

The Kolomna Locomotive Works has also produced and is now testing a new type of high-pressure locomotive equipped with a uniflow boiler. Another type of high-pressure locomotive is being designed at the Voroshilovgrad Works and will be placed on the line next year. The Voroshilovgrad plant is also constructing an experimental steam-electric locomotive, designed by Engineer Meizel. Its efficiency will be more than double that of the ordinary steam locomotive.

Both in industry and in railway transport the U.S.S.R. has surpassed all other countries in rate of development.

This is brought out for example by the increase in the number of locomotives on the lines. During the five years from 1927 to 1932 the Soviet Union produced 3,412 locomotives as against 458 locomotives built in 1927. During the Second Five-Year Plan period (1933-7) the U.S.S.R. built 5,957 locomotives, of which 1,215 were built in 1937 alone.

The wagons in use on Soviet railways have been completely reconstructed. They have been fitted with automatic brakes and one-fourth of all wagons in use have been equipped with automatic coupling. The standard 16-ton railway wagon is now being replaced by powerful four-axle box wagons, gondola cars, hopper cars, tank cars, and flat cars of from 50 to 70 tons capacity. Soviet factories are now preparing for mass production of a new type of all-metal passenger coach which will afford every modern convenience.

The following figures show the renovation of wagons in use on Soviet railways. From 1927 to 1932 the Soviet railways were supplied with 66,361 new goods wagons and 4,092 new passenger coaches. From 1933 to 1937 Soviet industry produced 170,375 goods wagons and 5,315 passenger coaches. In 1935 alone about 70,000 new vehicles were put into service.

The construction of 216 repair shops, most of them good sized plants, was completed in record time. In addition to these, 64 depots, 17 wheel repair shops, automatic brake inspection and repair shops have been built and many shops have been reconstructed.

At the same time there has been a marked improvement in station facilities. By 1937 over 22,000 mechanized and electrified inter-locking switches had been installed on the railways. Construction has been completed of 22 ordinary humps and 33 mechanized humps fitted with automatic retarders. Automatic block signals have been installed on 3,202 miles of line.

New lines are being built at a more rapid pace. Every year hundreds of miles of new railroad lines are put into operation. During the last five years approximately 3,000

miles of second tracks were laid and about 3,700 miles of existing line were reconstructed. During the same period over 62,000 miles of line were overhauled and repaired. The railways have been provided with 54 track laying and repair stations equipped with the latest machinery which makes it possible to perform repairs much more quickly with the use of ballasting machines, track graders, pneumatic sleeper-packing machines, motor rail-jacks, etc.

Railways are never closed down in the U.S.S.R. for lack of traffic, and the total length of line is steadily increasing. Between 1918 and 1936 the Soviet Union built over 9,000 miles of new line, while many additional lines have been completed. The rapid growth of Soviet railroads is graphically demonstrated by the following table:

*Aggregate mileage of Soviet railways*

End of 1913	..	..	..	36,300 miles
End of 1929	..	..	..	47,700 miles
End of 1932	..	..	..	50,733 miles
End of 1936	..	..	..	52,700 miles

The development of the Soviet railway system was possible because the Soviet Government devoted much attention to training highly skilled engineers and workers for all branches of the system. The number of institutes training railway engineers has increased sixfold since the Revolution, the number of railway colleges has doubled and the number of technical and apprenticeship schools has increased almost elevenfold. During the years of the Second Five-Year Plan period Soviet institutes trained over 15,000 railway engineers and 34,000 technicians. The institutes of railway engineering now have a student body of over 21,000 and employ some 2,000 professors and teachers. Many thousand people attend railway colleges and apprenticeship schools.

An extensive network of study courses and classes has been established to provide technical training to railway workers after working hours. In 1938 these courses were



completed by one million railway workers. Technical training centres, offering courses in popular technology and hundreds of technical libraries and laboratories are doing work of first-rate importance in raising the skill and knowledge of the huge army of railway workers.

This work is already bearing fruit. The Stakhanov and Krivonoss movement, a movement of people who have mastered their job to perfection, has spread far and wide throughout the entire railway system of the country. This movement derives its name from its initiators, Alexei Stakhanov, a coal miner and Pyotr Krivonoss, a locomotive driver. Locomotive drivers like Krivonoss, Ognev, Tritskaya, and Mokarov have found the ways and means of raising the efficiency of locomotives. They have increased running speeds and the weight of trains, and are running their locomotives longer distances without repairs. Shunting foremen Krassnov, Kozhukhar, and others have devised methods of making up trains in a shorter space of time and improved the methods of marshalling wagons. The methods introduced by these and others foremost workers have more than doubled labour productivity.

The example set by Krivonoss and his followers served as a stimulus to all railway workers. The Krivonoss movement, a movement for technical progress and higher efficiency, has grown to be a mass movement. At present there are approximately 600,000 Stakhanovites on the Soviet railways. One thousand five hundred railway workers have been decorated by the Soviet Government and six thousand have been awarded the railway workers' Merit Badge.

The initiators of this movement have been promoted to important executive posts in state and economic organizations. Makarov, erstwhile locomotive driver, is now assistant chief of the Central Locomotive Administration of the People's Commissariat of Railways. Another ex-locomotive driver, Ognev, is now general manager of the Dzerzhinsky Railroad; Trotskaya, also a former locomotive driver, has been appointed general manager of the

Moscow Circuit Railway. Zakorko, a former dispatcher, is now general manager of the Stalin Railway and Kutafyev, also a former dispatcher, is general manager of the Southern Railway.

Increased labour productivity is attended by a rapid rise in wages. Locomotive drivers employed in passenger traffic earn upwards of 1,000 rubles a month; drivers employed in freight traffic average 850 rubles a month. The average monthly wages of railway workers in 1937 amounted to 284 rubles, which represents a 100 per cent increase against 1932.

The U.S.S.R. will witness still greater economic development under the Third Five-Year Plan. The fulfilment of this great plan necessitates the further development and improvement of the railway services and it makes provision for the construction of 6,820 miles of new line, the laying of 4,960 miles of second track and the electrification of 1,141 miles of line.

The most important of the new lines to be constructed under the Third Five-Year Plan are the Akmolinsk-Kartaly line (part of the Stalinsk-Magnitogorsk line), and the Kislyar-Astrakhan line. New lines are to be built in Georgia, Armenia, Azerbaijan, the Urals, Siberia, the Ukraine, and in the central regions of the U.S.S.R.

Under the Third Five-Year Plan 37,300 million rubles will be expended on capital construction on the railways, as against 20,700 million rubles under the Second Five-Year Plan.

The plan also provides for an increase in the number of locomotives by 8,000, particularly condenser locomotives, which in the next few years will become the leading type of locomotive in use on Soviet railways for freight traffic. During the period of the Third Five-Year Plan 4,200 condenser locomotives will be placed on the line.

The railway system will receive 225,000 four-axle goods wagons and 15,000 passenger coaches; 300,000 goods wagons and 4,000 passenger coaches will be equipped with automatic coupling. Automatic brakes are

to be installed on 200,000 wagons. The number of repair shops, both for locomotives and wagons, is to be increased, especially on the Ural, Siberian, Far-Eastern and Central Asiatic lines.

One of the provisions of the Third Five-Year Plan is the further extension and development of railway junctions. Large-scale construction is to be undertaken primarily on the Donbas-Krivoi Rog and Leningrad-Moscow lines, in the Eastern Ural districts, on the lines linking up the Northern territory and the Murman region with the central part of the Soviet Union, Western Siberia with Central Asia and on the lines running through the south-western, western and eastern districts of the country.

The fulfilment of this plan will result in the increase of freight traffic from 220,000 million ton-miles in 1937 to 316,700 million ton-miles in 1942.

The Third Five-Year Plan holds out the prospect of further rapid development of the Soviet railway system.

## WATERWAYS AND WATER TRANSPORT

*By A. Blidman*

### ORDER OF LENIN. STAKHANOVITE STEVEDORE

**T**wo oceans and twelve seas wash the shores of the Soviet Union. Its seacoast stretches for 26,703 miles. The vast expanse of the country is intersected by 500,000 rivers; its inland water surface includes two seas and 180,000 lakes. No country in the world can compare with the U.S.S.R. in the number and might of its navigable inland waterways which aggregate 248,400 miles.

In tsarist Russia the length of the navigable waterways open for traffic (excluding rivers serviceable for floating timber) was 27,945 miles. But only 22,356 miles were equipped with flash signalling installations for the guidance of mariners, and these buoys, beacons and so

forth were of a primitive quality hardly comparable to the installations now in use. Under the Soviet Government the length of the navigable waterways (excluding those serviceable for floating timber) has increased by 37,881 miles and now comprises 65,826 miles.

The rivers of the Soviet Union are important not only as a means of traffic, they are at the same time a mighty source of electric power supply. As early as 1919, when the Civil War was raging all over the country, work was begun on the first Soviet hydro-electric power plant on the Volkhov River, not far from Leningrad. During the First Five-Year Plan period a gigantic dam was built across the Dnieper River, in the Ukraine, which raised the level of the river by 123 feet. Prior to this the Dnieper rapids barred navigation over a considerable stretch of the river, but with the completion of the dam the rapids disappeared and the river became navigable from its upper reaches to the Black Sea. A triple chamber lock allows for the passage of craft. The Dnieper Hydro-Electric Power Plant with a capacity of 558,000 kilowatts generates more electric power than did all the electric power plants in tsarist Russia.

Dams have been built on the River Svir, near Leningrad, where a powerful hydro-electric power plant is now operating. Another hydro-electric power plant will be built here during the Third Five-Year Plan period.

In Karelia, cutting through granite hills and virgin forest, a canal, 141 miles in length, was built in twenty months. This canal links the White Sea with the Baltic Sea.

Another feat of engineering, but far more complicated, was the building of the Moscow-Volga Canal. Two hundred large works had to be built along its route of 79.5 miles. These works include eleven locks, eight earth filled dams, seven spillways, six flood-gates, five pumping stations, eight hydro-electric power stations, seven railway bridges and twelve bridges for other traffic. The whole scheme was completed in four years.

In the building of the canal 170 excavators were

employed, hundreds of locomotives, motor-shunters, concrete mixers, hydro-monitors, thousands of conveyors and electric engines. Volga River water now washes the walls of the Kremlin in Moscow. Formerly the Moscow River was very shallow and hardly suitable for river craft. Now it has been linked up with the great Volga thoroughfare. The water course from the capital to Leningrad has been reduced by 685 miles and the distance to Gorky by 68 miles. The largest vessels can now sail the canal which can handle annually some 15,000,000 tons of cargo in any given direction.

The amount of capital invested in water transport is increasing with every year. Under the First Five-Year Plan 1,258 million rubles were assigned to this branch of the national economy. The sum appropriated under the Second Five-Year plan was 2,852 million rubles. These sums were expended on building a modern technically well-equipped fleet of river and ocean going vessels, on refitting existing vessels, on the construction of new ports and reconstructing existing ports. New shipbuilding yards and dockyards were built in various parts of the country, while new equipment was installed in the existing yards, thus placing them on an equal footing with the up-to-date enterprises.

The Soviet salvage organization, Epron, has been doing excellent work these last fifteen years in raising shipwrecked or sunk vessels from the beds of seas, rivers and lakes. Many a vessel that was sent to the bottom by the foreign invaders during the Civil War has been given a new lease of life due to the efficient work of Epron and is now ploughing the rivers and seas under the flag of its Socialist country.

The fleet of the Soviet merchant marine is rapidly increasing in size thanks to the new vessels that have been built for it by the home yards. Many vessels were also ordered to be built or purchased abroad. The tonnage of the Soviet merchant marine has increased nearly three and a half times between 1923 and 1937. These vessels differ radically from the type of vessel formerly in use.

In 1914 the deadweight of a sea-going vessel averaged 1,150 tons. At present the average deadweight is around 3,000 tons.

The Soviet Government has created a large and modern tanker fleet in the Caspian and Black Seas. The fleet of Soviet icebreakers is the largest and most powerful in the world. In the winter months these vessels ensure a free passageway for ships entering and leaving all icebound ports and also maintain a regular service between Murmansk and Vladivostok along the Great Northern Sea Route.

The Soviet river flotilla is practically new. During the two Five-Year Plan periods, i.e. 1928-37, the carrying capacity of the fleet of river steamers and motor ships has almost doubled, while that of barges has trebled.

Many new vessels have been added to the river transport service. These include steamers and motor ships ranging from 150 to 1,200 h.p., cargo-passenger boats from 200 to 800 h.p., steamers having a deadweight of from 1,750 to 3,000 tons, refrigerators and numerous motor boats. Many new barges have been built for carrying oil in bulk and dry goods, with a carrying capacity of from 1,000 to 4,000 tons. The Moscow-Volga Canal maintains its own fleet of comfortable passenger motor ships of from 280 to 700 h.p. The fleet of shallow draft motor boats for the lesser rivers is constantly growing. This has considerably enhanced river and sea shipments. In comparison with the pre-war period the cargo carried by the Soviet water transport system during the Second Five-Year plan period has increased 300 per cent. The freight turnover of the Soviet water transport system aggregated 43,000 million ton-miles in 1937.

In 1924 the freight turnover of sea-going vessels aggregated 3,900,000 tons. In 1937 it already exceeded 29 million tons. During the last ten years shipments of timber have increased eleven times. In 1938 some 49 million tons of oil were shipped by Soviet tankers.

The Soviet merchant marine has considerably increased its relative standing in the import and export trade. In

1929 Soviet vessels carried 10.3 per cent of the country's foreign trade. By 1936 this had already grown to 35.9 per cent.

The Soviet flag can now be met in every port of the world and along all the main ocean and sea routes. Regular sailings are maintained between the U.S.S.R. and the U.S.A.

The importance of the water transport service as a means of conveying passengers is borne out by the fact that in 1938 the fleet of Soviet river steamers alone carried some 67 million passengers.

During the last few years almost all the previously existing seaports and river wharves have been thoroughly reconstructed and brought up to date. Ports like Lenin-grad, Odessa, Novorossisk, Murmansk, Nikolayev, Poti, Mariupol, Baku, Makhach-Kala, Vladivostok and Archangel have been fitted out with new moorings, portal cranes and other modern port facilities, not to mention elevators and cold storage plants. New ports have come into being such as: Onega, Soroka, Kandalaksha, Igarka, Naryan-Mar, Nogayevo, Kara-Bogaz-Gol, Port Ilyich and Otchemtchiry.

Antiquated river wharves and moorings have been re-built and fitted out with new and up-to-date equipment. Such river ports as Gorky, Stalingrad, Kiev, Dniepropetrovsk, Astrakhan, Rostov-on-Don, Perm, Novosibirsk, Archangel, Moscow and Zaporozhye have changed beyond all recognition. Of the new river ports, Lenin Harbour on the Dnieper River, in the vicinity of the hydro-electric power station, deserves particular mention.

The new mechanical appliances with which the ports and harbours have been fitted have made the work of the stevedores much easier. In 1938 50 per cent of all river vessels were loaded by mechanical means, as a result the labour-productivity of the stevedores increased many times over.

The new machinery installed in the ports and harbours has given rise to new vocations; crane operators, con-

veyor belt operators, engine men, electricians, chauffeurs, mechanical engineers now supplant the longshoremen of former days. Engineers, technicians and executive personnel for the river and sea transport service are being trained by the Academy of the Water Transport System, three engineering colleges, 29 technical training schools and 20 workers' colleges. The number of people enrolled in these schools and colleges totals 32,000. Apart from these educational establishments 60 schools are giving special vocational training to juveniles. A large network of central and local courses for Stakhanovites are training or raising the qualifications of machine operators, foremen, stevedores, dispatchers and wharf superintendents.

With machinery as an auxiliary, the water transport workers are improving this machinery, making it work better, quicker, in a word, squeezing out of it all that is possible.

During the 1936 navigation season I was working in the coal harbour of the Kiev port. The loading was done by means of a "Yanvarets" conveyor belt. The loading capacity for this type of conveyor was fixed at 32 tons per hour. But owing to various slight defects it was never possible to load more than 28 tons. I made a careful study of the conveyor belt. A simple innovation, proposed by me, had an immediate effect. The brigade to which I belonged began to fulfil the scheduled rate 100 per cent. Further improvements which I introduced enabled us to increase the coal loadings to 40 tons per hour. Naturally, our earnings increased accordingly. We began to make 6.35 rubles an hour. Continuing the work I had begun of improving the conveyor belt, I succeeded in bringing our loading up to 50 tons of coal an hour. The conveyor belt hardly managed to cope with the amount of coal the men were shovelling into the loading funnel. What I then did was to increase the speed of the conveyor belt from 2.95 feet per second to 3.9 feet, change the sheaves and lengthen the funnel. The result was that our loadings again began to grow—as much as 70–80 tons per hour.



I was bent, however, on improving this. I proposed a drive for 100 tons an hour. Doubting Thomases did not believe that this was possible. But I was convinced that it was. All that had to be done was to speed up the conveyor belt, instal a more powerful motor and enlarge the loading funnel so that it would be possible to shovel coal into it from three sides instead of one.

The day after this innovation was introduced the loadings jumped up to 120 tons per hour, and in the presence of a special commission sent to test my innovation the result shown was 147 tons. Small craft which usually took about 40-50 tons of coal were now loaded inside half an hour. I then began to test my innovation with sand loadings. Success was assured from the very outset. Loading jumped up to 290 tons per hour. Our earnings also showed a considerable increase. Although we were making record loadings we were not in the least tired and would go home from work happy and jolly.

The press began to take an interest in our work. At first items began to appear in the paper published by the port authorities. Then articles began to be published in the Kiev papers and finally in the newspapers of the capital. In the Soviet Union inventions like mine, or for that matter any scheme for rationalizing industry, serving to make it more productive, are not the private trade secret of any individual or enterprise. They are immediately made public and introduced all over the country. The Stakhanovites of the Dniepropetrovsk port asked us to give them the details about our innovations. A brigade of Kiev stevedores immediately left for Dniepropetrovsk to demonstrate our methods to the local stevedores. After this the Kiev stevedores challenged the Dniepropetrovsk men to a Socialist competition.

We were bent on showing record results. We fixed up two additional conveyors of the "Samarets" type and linked them up with the main line. This enabled us to feed the main conveyor right from the coal dumps. The loadings jumped to the record figure of 214 tons per hour.

At a rally of inventors which was held in Moscow in

the winter of 1936 I undertook to increase the productivity of my conveyor to 300 tons per hour. The actual results, however, during the 1937 navigation season were far beyond my fondest hopes. Our loadings rose to 382 tons per hour.

In the autumn of 1937, together with a group of Kiev stevedores, I was sent to study at the Leningrad Water Transport Academy. The daytime I devoted to study, but at night I worked out the details of a plan for bringing loadings up to 500 tons per hour.

In the spring of 1938 I was in Dniepropetrovsk. Last year's record established by my brigade had already been topped by another brigade—their loadings being 392 tons. I decided to give a hand to the brigade that was lagging most behind. In a short while this brigade, which had always shown the poorest results, was loading 435 tons, beating the records set by the best brigades. A few days later my plan of 500 tons per hour became a reality—in one hour my brigade loaded 504 tons of coal. The very next day another brigade also topped the 500 mark, loading 500 tons of salt. But soon this high level was left behind. My brigade began loading 630 tons per hour. In other words we were fulfilling 20 normal loading quotas. The conveyor was moving at the rate of 11.4 feet per second. Other brigades were also showing good results. By the end of 1938 even this high level had been surpassed. Our loadings were now 1,059 tons of coal an hour. In 1939 I have pledged myself to bring up the coal loading on the existing equipment to 2,000 tons an hour.

Every port, every wharf has its own Stakhanovites, its own inventors, its own rationalizers. The names of Petrash and Henkin, Stakhanovite stevedore men from the port of Odessa, are familiar all over the Soviet Union. At the present moment Petrash has been promoted to superintendent of one of the largest ports in the country—the port of Baku. Henkin, who is a foreman stevedore, was elected a member of the Supreme Soviet of the U.S.S.R.

Captain Chadayev, master of the *Stepan Razin*, was the first to begin towing larger caravans of barges. His vessel



boast of only 12 second-rate hospitals. By the middle of 1937, 127 hospitals, 270 clinics and dispensaries, 268 first aid stations (located directly in the yards, wharves, etc.), 247 feldsher stations, 42 health centres for children were at the service of the water transport workers.

While the adults are busy at work loading, manning, building or repairing vessels their children are looked after in 400 kindergartens. The best of everything is ensured to the children, who are under the constant observation of trained nurses and doctors and experienced teachers. In the spacious rooms and playgrounds of these kindergartens the children find interesting pastimes in collective games, music, singing and drawing. In the summer time the kindergartens leave for the countryside.

Under the Third Five-Year Plan (1938-42) the water transport system will play a still more important role in the economic life of the Soviet Union. The fleet of river and sea vessels will be considerably improved from the technical standpoint and will be supplemented by new and still better vessels. The plan provides for the construction of new ship-building yards. The freight turnover of river transport is planned at 36,000 million ton-miles for 1942 and that of sea transport at 32,000 million ton-miles.

New water arteries are to be opened during this Five-Year Plan period and these will increase the length of the inland waterways from 63,342 miles (the total length at the beginning of 1938) to 76,015 miles.

Of the Volga projects the Uglich development and Rybinsk development will begin to function during this period, while the year 1942 will see the completion of the Rybinsk and Uglich reservoirs. This will increase the depth of the river between Rybinsk and Ivankovo from 4 feet to 16.5 feet. At Kuibyshev work is under way on the largest hydraulic engineering scheme in the world—two hydro-electric power plants of an aggregate capacity of 3,400,000 kilowatts. The dams here will raise the level of the river for a stretch of 1,242 miles and this will allow the passage of ocean-going vessels, provide cheap power

to factories and works along the Volga, the South Urals and Moscow, besides irrigating 7,410,000 acres of arid land.

The general plan for the reconstruction of the war arteries of the U.S.S.R. provides for the construction of eight hydraulic engineering development schemes on the Volga River alone, including the three now under construction. Preliminary work has already begun on the Kama River development scheme near Solikamsk, in the Urals, one of the four projects that will be built on this river. Powerful hydraulic engineering projects will also be built on another tributary of the Volga—the River Oka. A canal at Stalingrad will link up the Volga and the Don rivers. This will give the Volga an outlet to the open sea, connecting it with the Sea of Azov and the Black Sea. With the completion of the Volga-Don Canal, Moscow will become a port of five seas.

The reconstruction of the Volga-Baltic waterway will also be undertaken during this period and will transform this route into a deep watercourse linking up the Volga with the White Sea and the Baltic Sea.

The Kama-Pechora-Vychegda watercourse will link the Volga with the river of the North giving it an outlet to the Arctic.

By the end of the Third Five-Year Plan period the Northern Sea route from Murmansk to Vladivostok will function as a normal route ensuring regular scheduled shipments to and from the Far East.

The Soviet merchant marine, furnished with new, first-class vessels, will ensure still cheaper and quicker shipment of raw materials for the needs of industry, agricultural produce, manufactured goods and consumers' goods produced by Soviet works and mills, along the waterways of the U.S.S.R.

## THE MOSCOW-VOLGA CANAL

By A. Komarovskiy

ENGINEER. ORDER OF LENIN

ON the bank of what once was a small stream called Khimki, just a few miles outside of Moscow, towers a magnificent structure built of granite and marble. From a distance it looks like a giant double-decker ocean liner with a structure reminiscent of a captain's bridge in the middle. A five-pointed gold star glistens at the top of its tall spire of stainless steel, rising 262 feet above the ground. The main entrance to the building is decorated with porcelain discs bearing sculptured representations of the Kremlin, the Palace of Soviets, the Lenin Mausoleum, the Theatre of the Red Army and the Dnieper Hydroelectric Station. The porcelain discs on the land side depict a number of famous ships, such as the ice-breaker *Krassin*, the Soviet cruiser *Aurora*, Columbus' caravel, etc. A broad granite staircase leads down to a concrete pier. The waves of the newly-created wide Khimki Lake lap the stone moorings.

This building is known as Moscow's Northern River Port. Its façade ought to bear the inscription:

"Moscow's Port of three Seas:  
The White, Baltic and Caspian."

The history of the canal which links the Moscow River with the Upper Volga dates back two hundred years.

In the 1720's Emperor Peter I commissioned engineer William Henning to design the plans for a canal between the Volga and the Moscow River. The plan called for the building of 100 locks with a water-level of not more than 6½ feet each. The canal was to be navigable for vessels with a deadweight of about 50 tons. A trip along the projected canal was to take at least three days.

Fairly detailed plans were drawn up. But the task of cutting that kind of canal seemed too complicated and unrealizable in those times. The project was pigeonholed and the question of the canal was not broached again for another hundred years.

The idea of building a Moscow-Volga canal was resuscitated in the nineteenth century during the reign of Nicholas I in connection with the decision to erect the Cathedral of Christ the Saviour in Moscow. At that time the building of a cathedral of the size planned seemed to be a colossal undertaking, and the transportation of the necessary building material presented a practically insuperable problem. After interminable meetings of committees and sub-committees it was decided to dig a canal between Moscow and the Volga for the sole purpose of transporting limestone and granite from the upper reaches of the Volga to the construction site of the cathedral.

A project was drawn up for a canal between the Sestra River, a tributary of the Dubna which flows into the Volga, and the Istra River, a tributary of the Moscow River.

Work on this canal went on for 19 years. In the meantime the building of a railway between Moscow and St. Petersburg (now Leningrad) was begun, and economists pointed out that the clients who were expected to use the artificial waterway would prefer to send their shipments by the new railway. The work on the canal was accordingly discontinued and all its structures, finished and unfinished, were sold at public auctions. The idea of the canal was again consigned to oblivion for another century.

It was only in recent years, in the Socialist state of workers and peasants, that the idea of linking the Volga with the Moscow River was realized on the initiative of Joseph Stalin.

The realization of this idea faced the engineers with a difficult problem. The Volga whose waters had to be made to flow into the Moscow River was separated from the latter by 80 miles of fields, marshes and hills. The task was

to create a navigable waterway across the high divide between the two rivers.

The Soviet engineers in charge of the project displayed great ingenuity in solving this problem. They built a number of large earth dams and created a chain of artificial lakes joined with each other by means of canals and a system of locks rising in the form of "water stairways" from each side of the new waterway—from the Volga and from the Moscow River.

In order to provide an uninterrupted supply of water for the new waterway, a large storage lake, known as the "Sea of Moscow," was created at the Volga terminus of the canal. This lake holds 39,547,200,000 cubic feet of water and regularly discharges 3,530 cubic feet of water per second, which is conveyed by the canal to Moscow. Two hundred major engineering structures have been erected along the route of the canal, including 11 reinforced concrete locks 950 feet long and 98 4 feet wide each, 3 reinforced concrete and 11 earth dams, 7 railway and 12 highway bridges, 5 pumping stations, 8 hydro-electric stations with an annual output of 150 million k.w.h., and the Stalin waterworks.

In order to make the waters of the Volga flow into the Moscow River, it was necessary to excavate approximately 262 million cubic yards of earth and pour about 7 million tons of concrete. The building of the canal required 850,000 tons of cement, 9,156,000 cubic yards of stone and gravel and 110 million bricks.

This tremendous job was performed in record time. The entire construction took 4 years and 8 months. This could be accomplished only by having the work mechanized. The numerous machines used in the construction of the canal were all produced in Soviet factories.

The special railways, which served the construction site, were provided with 160 locomotives, 225 motor railcars and 2,100 flat cars.

The builders of the canal further had at their disposal 275 tractors and 3,050 trucks; 190 hydraulic giants and 170 steam shovels were working in the excavations and quarries.



Telephone and telegraph wires of a total length of 2,740 miles stretched like a dense cobweb overhead along the entire route of the future canal. The construction was provided with 3,200 telephones and 22 telegraph stations.

The Moscow-Volga Canal was finished in the summer of 1937, on the day fixed for its completion. On May 2, 1937, a flotilla of large motorships and cutters, the first to pass through the Canal, cast anchor opposite the walls of the ancient Kremlin.

In the navigation season, ships running exactly on schedule leave the pier at Moscow's Northern Port on Lake Khimki and proceed northward. The ships follow the canal, rising to the watershed and then descending again.

Small rivers flowed here but a few years ago. Now these rivers no longer exist. Huge earth dams were built across the channels of the streams. The latter flooded their natural valleys and formed artificial lakes covering a total area of over 23 square miles. Sections of the canal connect the separate storage lakes, and the vessel pursuing its course over the new waterway passes through the connecting canals, with their geometrically precise stone banks, from lake to lake, each abounding in small green islets and bays.

The Moscow-Volga Canal is 79.5 miles long. It is 18 feet deep, which is an unusual depth for river canals. Its width—280.4 feet—is sufficient to allow the simultaneous two-way passage of the largest river vessels. Big, three-decker passenger ships and heavy metal barges with a deadweight of 18,000 tons can sail on the Canal.

Looking at the green meadows, woods and pastures on the shores of the artificial lakes and observing the flocks of ducks rising noisily from under the very nose of the ship, or the grey gulls circling and screeching overhead, one might think that these lakes, bays and creeks have been created by nature and have existed here since time immemorial. Only the stone banks of the canal and the arched bridges spanning it bear witness to the fact that this waterway is the handiwork of man.

One of the artificial lakes is the Ucha Reservoir. Its south-eastern section is protected on three sides by earth dams. The reservoir holds 7,944,750,000 cubic feet of water. Here the silt and mud settle and the clear water then flows south through a special reinforced concrete channel about 17 miles long to the Stalin Waterworks where it is further purified before it passes into the pipes of Moscow's water distribution system.

The last lake in the series of steps by which the canal rises to the crest of the watershed is bounded by an earth dam. Next to the dam rise the austere and magnificent white stone towers of Lock No. 6. After passing through the gates of this lock the north-bound vessel begins its descent of 125 feet down the steps of the northern slope of the Canal leading to the "Sea of Moscow" on the Volga. The descent is down a flight of five steps, each of a height of from 19.6 to 26.2 feet. The length of each of these steps, while varying, is measured in terms of miles.

The architecture of the structures along the route of the Canal is also worth noting. Until recently very little attention was paid to the architectural aspect of hydro-technical works. Hydraulic engineers maintained that a lock, for instance, was primarily an engineering structure and its appearance was entirely subordinated to technical requirements. In their opinion every attempt at architectural designing would only tend to obscure the clear and precise purpose of the various structures. They cited the examples of the Suez, Panama and Kiel Canals, where all the structures are devoid of any architectural embellishment. The builders of the Moscow-Volga Canal were of different opinion. They held the view that each lock must have its own architecture, and that all the structures of the finished canal must be so architecturally designed as to serve as a fitting monument that would tell future generations of the heroic work of the tens of thousands of workers engaged in its construction.

The Soviet architects attained splendid results in coping with the difficult problem. The lofty towers rising above Lock No. 6 are an example in point.

The lock itself is an immense ferro-concrete chamber 950 feet long and 98·4 feet wide. It lowers the vessel 26·2 feet down the first step of the northern descent. At each of the five steps of the descent the lock is rounded by an auxiliary canal with a pumping station in the centre. The pumping station at Lock No. 6 is a magnificent tall building faced with natural stone of a light hue. Inside, it is equipped with four propeller pumps which have no equals anywhere in the world. Each pump weighs 85 tons. The diameter of its turning wheel is 8·2 feet. The capacity of its motor is equal to that of the engine of a passenger locomotive. The pipe by which the water is brought to the pump is so wide that a heavy truck could pass through it easily. Each pump raises 5,400 gallons of water per second to a height of 26·2 feet.

As the ship proceeds northward it passes through other locks. Around each lock one sees flowers, young trees, signal lights. Only the lock towers in each case are of a different shape, of a different appearance and different colour. At last, having descended all the steps of the northern slope, the ship enters the "Sea of Moscow." The contours of the shores are veiled in a misty haze. One catches the sound of a distant ship's siren. It is echoed by the sirens of other ships.

From the "Sea of Moscow" vessels sail in different directions. Some proceed west—to Kalinin. Others take the course southward—to the Canal and then on to the Moscow River, Oka, Volga and the Caspian Sea. Boats sail from here eastward to proceed along the old channel of the Volga to the Mariinsk system leading to Lake Onega and further west to Leningrad and the Baltic or north to the White Sea along the Stalin White Sea-Baltic Canal. This last route—from the Sea of Moscow to the old channel of the Volga—can be clearly seen from the ship. There is a broad canal leading east from the lake. In the distance rise the white stone towers of a lock which affords passage to the ships proceeding from the "Sea of Moscow" down to the Volga. To the right may be seen the earth dam blocking the old channel of the Volga.

Next to it is the concrete building of the Ivankovo hydro-electric stations with 30,000 kilowatt capacity. (A similar hydro-electric station stands at the beginning of the steps of the southern descent from the divide to the Moscow River.) Immediately behind the Ivankovo hydro-electric station rises the wall of a concrete dam across the Volga, raising the level of the river 59 feet. A giant crane moves back and forth on top of the dam, raising and lowering the powerful metal shields which block the eastward course of the Volga. An earth levee extending for 5.5 miles from the concrete dam bounds the "Sea of Moscow" in the east. And rising above the dams, locks, the hydro-electric station, the expanses of the "Sea of Moscow" and the vessels plying its waters there stand at the entrance to the Canal two colossal monuments—the statues of Lenin and Stalin hewn in grey granite.

A few years ago the Volga flowed here. Each spring it rose in angry floods inundating the adjoining meadows. Each summer its level dropped, and shoals and sandbanks appeared on the surface. In the hot summer months even small vessels with a low draft could not sail in the upper reaches of the Volga.

This place has now been turned into the "Sea of Moscow"—a broad lake covering an area of 126 square miles. It is here that the pumping stations obtain the water for the new waterway. It is from here that water is conveyed to the water mains of the capital. Vessels ply the waters of the wide lake, signalling each other with their sirens. The distant shores echo the signals. In the night the route across the lake is indicated by automatic signal lights. The ship proceeds westward. There is not a single shoal or sandbank on the way. A broad expanse of water covers the former meadows and brushwood. The waves of the new lake swell over the site where some villages and the small town of Korchev stood only a few years ago—the villages and the town have been moved to new places.

After having traversed a distance of 74.4 miles from the

Volga Dam, the ship is moored at the new snow-white leading pier of the port of Kalinin.

This terminates the trip.

With the cutting of the canal, the waters of the Volga have begun to flow to Moscow. The capital is now fully provided with drinking water. The waters of the Volga have replenished the Moscow River; as a result the water level of the old Moscow River at the Kremlin has risen almost ten feet. The Moscow has become a deep river navigable for big ships.

The canal has shortened the distance between Moscow and a number of other cities of the Soviet Union. Thus the distance to Gorky has been reduced by 68 miles. The distance from Moscow to Leningrad by water has been shortened by 68½ miles.

At the initiative of the great Stalin, the city of Moscow, which was formerly far removed from "big water," has thus been transformed into a port of three seas: the White Sea, the Baltic, and the Caspian Sea.

## SOVIET DEMOCRACY ·

*By I. Trainin*

MEMBER OF THE ACADEMY OF SCIENCES OF THE U.S.S.R.

SOVIET democracy is the expression of the sovereignty of the Soviet people, exercised through the medium of their Socialist state.

The principles of Soviet democracy were affirmed by the Great October Socialist Revolution. These principles were later consolidated in the severe battles of the Civil War, in the struggle against the numerous enemies of Soviet power. In this war the exploiting classes were supported by foreign interventionists who strove to subjugate the country and its people.

The working people of the U.S.S.R. have not only liberated themselves, once and for all, from the yoke of the exploiting classes, but have upheld their national independence against the attacks of foreign interventionists.

But this was not the end of the struggle. Routed in open battle, the enemies of the Soviet state attempted to offer resistance by other means. They organized conspiracies against the Soviet Government and insinuated themselves into the Soviet state apparatus in order to use it to the detriment of the working people.

Under the conditions of Civil War and the subsequent struggle against the covert agents of the defeated classes, there could be no equality between the people who were defending what they had won in the revolution and the remnants of the exploiting classes, who persisted in their efforts to continue their subversive activities. This explains why, prior to the adoption of the new Constitution of the U.S.S.R. in 1936, there were franchise restrictions in the case of the bourgeoisie and persons who had constituted the pillars of the overthrown regime—former members of the tsarist police and gendarmerie, etc.

The Communist Party and the Soviet Government, however, never regarded the restriction of rights, and particularly the disfranchisement of certain groups, as a permanent measure.

As far back as 1919, during the Civil War, V. I. Lenin stressed the fact that "... in the not distant future the cessation of foreign invasion and the completion of the expropriation of the expropriators may, under certain conditions, create a situation in which the proletarian state power will choose other methods of suppressing the resistance of the exploiters and will introduce universal suffrage without any restrictions."

It must be pointed out that the Socialist state, in depriving an insignificant handful of exploiters of the franchise, at the same time drew into the activities of the Soviets the great mass of the people, who had enjoyed no political rights under tsardom. Likewise, certain inequality in the basis of representation which formerly existed<sup>1</sup> was of a temporary character. It served to consolidate the leading role of the working class, which, because it was more organized, conscientious, staunch, bold and resolute in the fight against the enemy, in alliance with the peasantry, prepared the conditions for the extension of Soviet democracy. Under the leadership of the working class, the peasants, that vast mass of small property owners, resolutely took the path of large-scale collective farming, the path of Socialist development.

By fighting for the vital interests of the whole people, the working class has learned to administer the state. The alliance of the working class with the peasantry was forged in the joint struggle against the enemies of the Soviet power. The colossal successes achieved in the creation of the new Socialist society have won over the wavering elements to the side of the working class.

The training of executives for all spheres of state and economic activities has always constituted a special

<sup>1</sup> Elections to All-Union Congresses of Soviets were held on the following basis: From urban Soviets—one delegate for every 25,000 electors; and in the case of rural districts—one delegate for every 125,000 of the population.

concern of the Soviet Government. A new intelligentsia which serves the people in all branches of Socialist construction has come to the fore from among the people, from the ranks of the workers and peasants.

The indissoluble contact between the Soviet state apparatus and the people has made it possible to achieve results unparalleled for their significance, in a short space of time and in a country occupying one-sixth of the earth's surface and inhabited by scores of nationalities living amicably in an atmosphere of fraternal co-operation.

The Socialist economic system is fully established in the U.S.S.R. The entire wealth of the country—the land, waters, forests, mills, factories, mines, railways, etc.—belong to the whole people. The Stalinist Five-Year Plans of economic development have served to multiply many times over the wealth of the U.S.S.R. Exploitation of man by man has been completely abolished. The rapid growth of Socialist economy forms the basis for the steady rise of material well-being and culture of the working people.

The mighty Stakhanov movement, aimed at increasing the productivity of labour, is an expression of the creative enthusiasm of the masses. The working people of the U.S.S.R. realize that they are working for themselves and that the increased prosperity of their country leads to an increase in their own well-being. In this ever growing activity of the people lies the power and might of Soviet democracy.

The Constitution of the U.S.S.R. is the legislative consolidation of the victory of Socialism. The elimination of the exploiting classes, the increased political activity of the working people, and the growing might of the Socialist state have rendered the former franchise restrictions unnecessary. The Constitution of the U.S.S.R. marks an important stage in the extension and strengthening of Soviet democracy.

The very manner in which the new Constitution of the U.S.S.R. was adopted furnishes a model of genuine democracy. The nation-wide discussion of the new Constitution, unprecedented for its scope, brought out with



remarkable clarity the activity and political maturity of the people. At the same time, this nation-wide discussion showed that the Constitution of the U.S.S.R. embodies the aspirations and vital interests of the wide masses of the multi-national Soviet population.

The distinguishing features of Soviet democracy were especially evident during the elections to the Supreme Soviet of the U.S.S.R. and to the Supreme Soviets of the Union and Autonomous Republics, which were conducted on the basis of the Constitution.

Candidates were nominated by the various organizations of the working people. In every electoral area hundreds of meetings were held at mills, factories, on collective farms, state farms, in Red Army units, etc., at which the merits of each candidate were very thoroughly discussed. The confidence of the electorate in the given candidate was determined by his or her activities in the interests of the people, manifested in the various fields of Socialist construction—in industry, agriculture, science, art, etc.

The Soviet electoral system, too, is a model of the broadest democracy. The Electoral Law, based on the Constitution of the U.S.S.R., contains no restrictions with regard to property status, standard of education, domicile, sex, nationality or race. Suffrage in the U.S.S.R. is indeed universal, since it has been extended to all citizens, men and women, who have reached the age of 18, with the exception of insane persons and persons who have been convicted by a court of law to sentences involving deprivation of electoral rights. Soviet elections are direct elections, i.e. Soviet citizens elect all Soviets, from top to bottom, by direct vote. Elections are equal, each citizen being entitled to one vote.

Finally, voting in Soviet elections is by secret ballot and the law provides for strict punishment for any attempts to exercise influence on the voter during the polling.

The relations between the deputy and his constituents are a characteristic feature of Soviet democracy. Soviet electors entrust their deputy with the elaboration of laws

designed to strengthen the Soviet state and to facilitate the further development of Socialism. The electors exercise systematic control over the activities of their deputy. It is the duty of every deputy to report to his electors, and the Constitution provides that he is liable to recall at any time should he deviate from the policy adhered to by the electors.

The Constitution of the U.S.S.R. expresses the moral and political unity of the multi-national Soviet people. It provides the conditions for a still greater development of the public and state activities of the people. This was particularly clearly displayed during the elections to the Supreme Soviet of the U.S.S.R. and to the Supreme Soviets of the Union and Autonomous Republics.

The election campaign began with the study of the Electoral Law by all the voters. Study circles and lectures on the Electoral Law were organized in the mills, factories, and in apartment houses. Each citizen received a comprehensive explanation in his native language of his rights and duties as an elector.

The election campaign involved millions and millions of people, who on their own initiative, or through their various public organizations, took an active part in the campaign. In addition to members of local Soviets, hundreds of thousands of volunteer workers took part in drawing up and verifying the lists of electors. The ballot papers were printed in the native languages of the population of the given district. These conditions made for the widest possible participation of the electors in the election campaign and for a high attendance at the polls.

Altogether, public organizations delegated about one million of their representatives, including a large percentage of women, to the area and ward electoral commissions. This form of public control excluded any possibility of foul play, which is so frequent an occurrence during elections in other countries.

The extent of popular activity is shown by the fact that on December 12, 1937, the day of the elections to the Supreme Soviet of the U.S.S.R., 91,113,153 people or

96·8 per cent of the total electorate of the country went to the polls. The Communist Party formed a bloc with the non-Party workers, peasants, office employees and intellectuals—a bloc with the trade unions, the Young Communist League and other non-Party organizations and societies and put up joint candidates. In the elections to the Soviet of the Union 89,844,271, or 98·6 per cent of all who voted, cast their votes for the candidates of the Communist and non-Party bloc. In the elections to the Soviet of Nationalities (the other Chamber of the Supreme Soviet of the U.S.S.R.) 89,063,169 people, or 97·8 per cent, voted for the candidates of the Communist and non-Party bloc. In the elections to the Supreme Soviets of the Union and Autonomous Republics, 93,013,433 people participated, 92,461,146, or 99·4 per cent, voted for the candidates of the Communist and non-Party bloc.

The development of Soviet democracy has enhanced the creative activity of the great mass of Soviet people in the construction of a new Socialist economic system. Democracy in the Soviet Union is not democracy in the abstract, but Socialist democracy.

One of the outstanding features of Socialist democracy consists in the fact that it not only proclaims the rights of the citizens but actually guarantees the exercise of these rights by placing them on a firm economic foundation. This economic foundation of Soviet democracy is the Socialist ownership of the means and instruments of production, which guarantees the rights of the Soviet people, their material well-being and cultural development. The Soviet state guarantees real liberty.

“... It is difficult for me to imagine,” said J. Stalin, on one occasion “what ‘personal liberty’ is enjoyed by an unemployed person, who goes about hungry, and cannot find employment. Real liberty can exist only where there is no oppression of some by others, where there is no unemployment and poverty, where a man is not haunted by the fear of being tomorrow deprived of work, of home and of bread. Only in such a society is real, and not paper, personal and every other liberty possible.”

Such a society has been established in the U.S.S.R.

The Constitution of the U.S.S.R., clearest expression of Socialist democracy, proclaims that:

"The right to work is ensured by the Socialist organization of the national economy, the steady growth of the productive forces of Soviet society, the elimination of the possibility of economic crises, and the abolition of unemployment." (Constitution of the U.S.S.R., Article 118.)

The Socialist state presents the greatest possibilities for creative labour. The Stakhanov movement cements the union of science and labour. By their enthusiasm and practical experience, the Stakhanov workers contribute greatly to the scientific organization of labour and increase labour productivity. The tremendous facilities at the disposal of the working people for mastering science and technique open up unlimited perspectives for the development of the productive forces and, consequently, for the progressive rise in the well-being of the working people.

The Socialist state manifests particular solicitude for the working people. The Constitution guarantees to the working people the right to rest and leisure.

"The right to rest and leisure is ensured by the reduction of the working day to seven hours for the overwhelming majority of the workers, the institution of annual vacations with full pay for workers and employees and the provision of a wide network of sanatoria, rest homes and clubs for the accommodation of the working people." (Constitution of the U.S.S.R., Article 119.)

This article of the Constitution ensures the workers not only rest and leisure, but also the possibilities for cultural development and education.

Citizens of the U.S.S.R. have the right to maintenance in old age and also in cases of sickness or loss of capacity to work. (Constitution of the U.S.S.R., Article 120.)

The right to education is ensured by education being

free of charge<sup>1</sup> and by the system of state stipends for students in the universities and colleges. (Constitution of the U.S.S.R., Article 121.)

The development of the native languages of the various peoples of the U.S.S.R. has become a powerful means for the introduction of Socialist culture among the formerly backward nationalities.

Women in the U.S.S.R. are accorded equal rights with men in all spheres of economic, state, cultural, social and political life. (Constitution of the U.S.S.R., Article 122.)

The Constitution provides legislative guarantees for the equality of rights of all citizens of the U.S.S.R. without exception. Article 123 of the Constitution of the U.S.S.R. states:

“Any direct or indirect restriction of the rights of, or conversely, any establishment of direct or indirect privileges for citizens on account of their race or nationality, as well as any advocacy of racial or national exclusiveness or hatred and contempt, is punishable by law.”

Soviet democracy has saved the small nationalities who were oppressed under tsardom and doomed to extinction. It has granted them equality, inspired them with a new confidence in their strength and abilities and has directed them along the path of economic and cultural development.

Socialist democracy, based as it is on a firm economic foundation, has raised the dignity of man. It has once and for all put an end to class and national oppression. It has led to a situation in which the working men and women of all peoples of the U.S.S.R., regardless of language, nationality or race, march forward as a united and single Soviet people, as masters of the country and its national economy.

Having established the moral and political unity of the people, Soviet democracy ensures for the country further victorious development and further successes on the path to the complete triumph of Communism.

<sup>1</sup> See note, p. 268.

## THE NATIONAL QUESTION SOLVED

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**T**HE U.S.S.R. is a country of many nationalities. Its vast territory, stretching from the Arctic tundras to the sub-tropics, is inhabited by scores of different peoples: Russians, Ukrainians, Byelorussians, Uzbeks, Georgians, Kazakhs, Azerbaijanians, Turkmenians, Yakuts, Buryats, Tajiks, Jews, Poles, Nentsi, Ossetians, Lezghins, Greeks, Tatars, Kalmyks, Chukchi, Yukaghirs, Aleuts, and numerous others.

Want and destitution was the lot of these nationalities in the past. Theirs was a life of endless misery left in the wake of frequent bloody tragedies which took their toll of thousands—and sometimes millions—of human lives. Lenin called tsarist Russia “a prison of nations.”

Prior to the Great October Socialist Revolution only the Russians were considered the indigenous population of the country. All other nationalities were termed “aliens.” But even of the Russians only a small minority enjoyed a privileged position. The overwhelming majority of the Russian people—the workers and peasants—were denied political rights and bore the yoke of economic oppression.

The peoples of the Far North were the victims of the sharp practices of the traders who would come to their habitations and exchange a sewing needle for a deer, or a bottle of vodka or a brick of pressed tea for the skin of a sable. The Chukchi would be tricked into exchanging a beaver skin for a bottle of vodka treated with makhorka and blue vitriol to give it an extra kick. In the Northern Urals traders would wheedle out a couple of the exceedingly valuable blue fox skins in exchange for an axe.

The mountaineers of the Caucasus—after having for

many decades waged an unequal war for their freedom—abandoned their auls (villages), orchards and pastures and retreated into the mountains, preferring to lead a life of semi-starvation in the recesses of the naked ridges rather than to submit to slavery. Many Kirghiz, Tajiks, and other inhabitants of the mountainous districts of Central Asia likewise left their fertile land and pastures in the valleys and retreated into the mountains.

Many a time did the peoples of the Caucasus and Central Asia suffer cruel and bloody defeat in their fight for their national independence; but defeat could not stifle their love for liberty, and tsarist Russia was always rife with insurrections and rebellions of the oppressed peoples.

The tsarist government tried to paralyze the resistance of the subjugated peoples and to maintain its own rule by sowing hatred and discord among the various nationalities and inciting one nation against another; Russians against Jews, Armenians against Azerbaijanians, the Turkmenian tribes against one another, etc.

Anti-Jewish pogroms and massacres of the other nationalities were quite frequent in tsarist Russia. In the Caucasus a whole town, Shusha, was razed to the ground and most of its inhabitants—about 20,000 people—slaughtered as the result of a bloody massacre instigated by the tsarist government authorities.

The tsarist government resorted to pogroms and incitement of national hatred most often as a means of stemming the rising tide of the revolutionary movement in the country. By these means the tsarist officials tried to divert the anger of the people from the autocracy, to blame one nationality for the misery and destitution of another, to head off the struggle of the working people against the tsar's arbitrary rule.

Jews, Azerbaijanians, Uzbeks and people of many other nationalities were not allowed to hold government positions. The tsarist government was particularly ruthless in its policy of hate with regard to the Jews. In this respect the German fascists are worthy successors to the Black Hundreds of tsarist Russia.

Jews were confined to a so-called Pale of Settlement. They were not permitted to live in Central Russia or in St. Petersburg, then the capital, and in a number of other large cities. It may be mentioned that the Russian landscape painter Levitan, one of the greatest artists of Russia, was deported from Moscow as a Jew. Jews were not allowed to engage in agriculture. A special quota was established for the admission of Jewish children to high schools and universities, according to which the number of Jews could not exceed three per cent of the total number of students in St. Petersburg and Moscow and five per cent in other cities.

The numerous peoples inhabiting the territory of the former Russian Empire endured the double yoke of the tsarist government and of their own landlords, feudal princes, priests, and merchants.

The policy of the tsarist government was to keep the enslaved peoples of its colonies in a state of ignorance and darkness. In pre-revolutionary Kirghizia only one out of two hundred could read and write. There was not a single university or college in Kazakhstan, Kirghizia, Armenia and other colonies of the tsar's government. The number of elementary schools could be counted on one's fingers. Instruction in the native languages was forbidden. No literature was published in the languages of the oppressed colonial peoples. The creative genius of the non-Russian nationalities was suppressed. The treasures of folk art, the products of the age-old national cultures of the Ukrainian, Georgian, Armenian, Kirghiz and other peoples, were buried in oblivion. In Georgia people were persecuted for singing popular folksongs. The Ukrainians were not permitted to have their own theatre. Scores of peoples of old Russia even had no alphabet of their own.

The Great October Revolution, which transformed the former Russian Empire into a free democratic state, into the fatherland of all labouring people, put an end to national oppression. The October Revolution emancipated all the peoples of Russia, and they have since become the master of their own destinies.



A few days after the victorious October Revolution, on November 15, 1917, the "Declaration of Rights of the Peoples of Russia," a document of the greatest historic significance, was signed by Lenin and Stalin, the leaders of the Revolution.

The document announced the principles of the national policy of the Soviet Government:

1. Equality and sovereignty of the people of Russia.
2. The right of the peoples of Russia to free self-determination, including the right to secede and form an independent state.
3. The abolition of all national and national-religious privileges and restrictions whatsoever.
4. Free development for the national minorities and ethnographic groups inhabiting the territory of Russia.

The declaration of Rights of the Peoples of Russia pointed out to the labouring masses of the various nationalities the only way to their emancipation—the brotherly union of peoples, their common struggle against the rule of the bourgeoisie—for their independence and freedom.

The Russian workers and peasants, fighting in close unity with the working people of all the nationalities of the Soviet Republics, defended their state independence and routed the internal counter-revolutionary forces and the foreign interventionists. This historic victory of the Soviet power welded the working people of the various nationalities into a mighty force.

In 1922, soon after the end of the Civil War and the defeat of the foreign interventionists, the first All-Union Congress of Soviets was convened in Moscow. This Congress decided unanimously to form the Union of Soviet Socialist Republics. The declaration adopted by the Congress stressed the voluntary nature of the union of all the Soviet Republics, each of which reserved the right freely to secede from the Union.

The amalgamation of the several Soviet Republics into a single Union was dictated, on the one hand, by the problems of economic restoration following the havoc

wrought by the war, and, on the other hand, by the instability of the international situation and the danger of new attacks, which necessitated the formation of a common front of all the Soviet Republics in the face of the capitalist world surrounding them.

The Great Socialist October Revolution abolished all national privileges and restrictions. But there still remained the heritage of the past—the actual inequality of the various peoples as a result of the deliberate policy of the tsarist government to maintain a different level of economic and cultural development for the different nationalities. When the Soviet Republic was formed, the Party of Lenin and Stalin at once set out to do away with this inequality.

The working class of the great Russian people and the splendid Russian culture with centuries of development behind it came to the assistance of the nationalities which had remained backward in their economic and cultural development. Russian culture has exercised an enormous and beneficent influence upon the culture of all the peoples of the U.S.S.R.

With the abolition of political inequality and of the exploitation of man by man the causes for national enmity have also been removed.

Suleiman Stalsky, the famous people's poet of Daghestan, once said: "The Bolshevik upheaval, which shook the whole world, has shaken up our old mode of life as well. Our vast plains have been lighted up by the bright and eternal fire of the Great October Revolution." The light of this revolutionary fire has penetrated to the mountain fastnesses of the Caucasus as well as to the deserts of Central Asia, to the Far Eastern taiga as well as to the tundras of the Far North.

There are peoples in the Soviet Union that have in two decades made a leap from medieval backwardness to twentieth century conditions. Modern culture has penetrated to the most remote and inaccessible auls whither the "natives" once withdrew in order not to submit to the tsarist colonizers.

All the national republics have progressed at a tempestuous rate. Their mineral wealth no longer lies idle in the bowels of the earth. Each year brought with it discoveries of new deposits of gold, zinc, coal, manganese, oil, tin, iron, lead, sulphur, etc. Over the landscape rise the derricks of newly-sunk mines and the smoke-stacks of recently-built factories. Powerful industries have sprung up in the various national republics. Coal, copper and lead in Kazakhstan, manganese ore in Transcaucasia, coal in Kirghizia, zinc in North Ossetia in the Caucasus, oil in Checheno-Ingushetia and along the southern slopes of the Urals in Bashkiria—all these mineral resources have become the basis for the industrial development of the respective republics.

In the past, the coal, copper and lead resources of Kazakhstan were left practically untouched. There was even no railway there before the Revolution. The first railway to traverse Kazakhstan was the Turksib, built in 1928-32. It connects Turkestan with Siberia and has brought to life vast stretches of semi-desert land.

A marvellous transformation has been wrought in the economic life of Uzbekistan. Here a number of huge textile mills have been built, and a powerful and complex irrigation system has brought about an unprecedented development of cotton growing.

Azerbaijan had only one industrial centre in the past—Baku, famous for its oil fields. But the Baku oil resources were exploited in a wasteful manner. The oil kings reaped enormous profits, while the whole country and the population of Azerbaijan lingered in poverty. At present many new industries are developing in Azerbaijan, while the output of oil has increased more than threefold.

Every one of the eleven republics comprising the U.S.S.R. has been undergoing a profound economic change and development. The railway stations of the Ukraine alone now handle more freight in a year than all the railway stations of tsarist Russia in 1913. More freight and mail is carried by aeroplanes in Transcaucasia,

Central Asia and Kazakhstan than in Germany, Great Britain and France combined.

Industrial progress in the national republics has been accompanied by an intensive development of agriculture. Collective farming has transformed the old auls and kishlaks. Modern scientific methods of cultivation and stockraising have been introduced where formerly primitive nomadic economy prevailed. Hundreds of thousands of tractors, harvester combines and other machines are used on the fields of the collective farms and state farms. Mountainous regions and boundless steppes where formerly only the wooden plough and mattock were known, have now been provided with modern implements and machines for efficient farming. 88,000 tractors and 27,000 harvester combines are in use on the fields of the Ukraine. The collective farms and state farms of Byelorussia dispose of 8,100 tractors, 4,000 threshing machines, 4,000 trucks, 1,200 flax-pulling machines. The valleys and plateaus of Kirghizia are cultivated with the help of 3,964 tractors. There are 6,885 tractors and 2,871 harvester combines in Tataria, 5,562 tractors in Azerbaijan, etc.

New crops have appeared in the national republics. Rice growing has been introduced in the Ukraine. In Transcaucasia, tea is grown on an extensive scale, and large citrus fruit groves have been planted. The breeds of cattle have improved, and among sheep the fine wool varieties are becoming predominant.

The growth of industry and agriculture has created a large demand for workers proficient in various trades and professions which were formerly unknown in some of the national republics. Among the native Kazakh population, for instance, there were formerly no smiths, not to speak of engineers, agronomists or physicians. Today Kazakhstan has its own native intelligentsia. There has been a steady increase in the number of professional people and the variety of professions among the people of the remote sections of the Caucasus, Central Asia, the Far North.

One of the manifestations of the former cultural backwardness of some of these peoples was the tenacity with

which the survivals of tribal feudal customs persisted among them, particularly with respect to women. When a girl was ready to be married she was traded off to the highest bidder. Her consent was never asked. She went to the man who offered the highest "ransom." Women were frequently abducted. Their homes were prisons to them. No strange man was allowed to see the face of a woman who did not belong to him. Women had to wear veils ("chadra" among the Azerbaijanians) or nets made of horse-hair ("chavchan" among the Tajiks and Uzbeks). The vendetta existed among the mountaineers of the Caucasus, and blood feuds between families were kept up for generations.

Among most of the Eastern peoples women enjoyed no rights whatsoever. Woman was looked down upon. She was the docile slave of her husband, father or brother. The Lezghins of Daghestan used to express contempt with the words: "If you can't do that you are nothing but a woman." In Azerbaijan men would say to women: "Don't mix into men's affairs with your dough-covered hands."

Only Soviet power brought the women emancipation. The Soviet laws protect the rights of women, which are in every respect the same as those of men. Under the influence of the Soviet national policy thousands of women in the East have developed and become statesmen, doctors, engineers, fliers, teachers, agricultural experts, etc.

The Soviet Government has from the very outset devoted great attention to the development of national culture and public education in the border regions of the former Russian Empire.

Universal free elementary education is enforced in the national republics just as it is throughout the Soviet Union. The number of children attending school has increased 35 times in Azerbaijan, 37 times in Turkmenia, 53 times in Uzbekistan, 58 times in Kazakhstan, 68 times in Armenia, 172 times in Kirghizia. In 1936 children in the U.S.S.R. were taught in school in 112 languages,

many of which had no alphabet of their own before the Revolution.

The few universities and scientific institutes that existed in tsarist times were all Russian. There were many nationalities that knew nothing about them. At present there are 22 institutions of higher learning in Byelorussia, 13 in Azerbaijan, 19 in Kazakhstan. The number of universities and scientific institutes in the Ukraine has grown from 15 to 139. The Ukraine today has more institutions of higher learning than Germany, although the population of the latter is twice as large as that of the former. The universities and other institutions of higher learning of the Russian Soviet Federative Socialist Republic alone are attended by more than three times as many students as there are in Great Britain, Germany and Italy combined.

The national policy of the Soviet Government has stimulated the development of creative talent and has opened up the springs of national art. It has revived the creative forces of the peoples. The works of the great writers of the Ukraine, Georgia, Armenia and other republics have become the property of the entire Soviet nation. The rich heritage of the culture of the various nationalities has been made accessible to the Russian people and to all the other peoples of the Soviet Union. The Ukrainian poet Taras Shevchenko, the Georgian poet Shot' ha Rust'hveli, the Kirghizian epos are now read by millions in the Soviet Union.

On the other hand, Russian and world culture has become accessible to all the nationalities inhabiting the U.S.S.R., exercising a tremendous influence on the development of their national culture. Pushkin and Darwin, Shakespeare and Cervantes, Tolstoy and Marx have been translated into dozens of languages of the Soviet peoples.

All the nations and races of the U.S.S.R., irrespective of their past or present condition, and irrespective of their numbers, enjoy fully equal rights in all spheres of economic, public, political and cultural activity.

Article 123 of the Constitution of the U.S.S.R. states:

“Equality of rights of citizens of the U.S.S.R., irrespective of their nationality or race, in all spheres of economic, state, cultural, social and political life, is an infeasible law.

“Any direct or indirect restriction of the rights of, or, conversely, any establishment of direct or indirect privileges for, citizens on account of their race or nationality, as well as any advocacy of racial or national exclusiveness or hatred and contempt, is punishable by law.”

All the Union Republics enjoy equal rights in absolutely every respect. Each of these constituent republics has its own constitution, which takes into account the specific features of the republic and is drawn up in full conformity with the Constitution of the U.S.S.R. To every Union Republic is reserved the right freely to secede from the U.S.S.R. The territories of the Union Republic cannot be altered without their consent.

The highest organ of state authority in the U.S.S.R. is the Supreme Soviet of the U.S.S.R., which consists of two Chambers enjoying equal rights—the Soviet of the Union and the Soviet of Nationalities.

Each Union republic, irrespective of the size of its population, elects 25 deputies to the Soviet of Nationalities; each autonomous republic elects ten deputies, each autonomous region five deputies, and each national area one deputy. Thus the Azerbaijan Soviet Socialist Republic with a population of slightly over three million, and the Ukrainian Soviet Socialist Republic, with a population of over thirty million, each send the same number of deputies to the Soviet of Nationalities. This places all the constituent republics, irrespective of the size of their population, on an equal footing, and enables each of them fully to defend its specific interests in the Soviet of Nationalities.

Such, in brief, are the main features of the policy which has led to the solution of the national problem in the

Soviet Union. We may sum up in the words of J. V. Stalin, the author of the Constitution of the U.S.S.R.:

"... the absence of exploiting classes, which are the principal organizers of strife between nations; the absence of exploitation, which cultivates mutual distrust and kindles nationalist passions; the fact that power is in the hands of the working class, which is an enemy of all enslavement and the true vehicle of the ideas of internationalism; the actual practice of mutual aid among the peoples in all spheres of economic and social life; and, finally, the flourishing national culture of the peoples of the U.S.S.R., culture which is national in form and Socialist in content—all these and similar factors, have brought about a radical change in the aspect of the peoples of the U.S.S.R.; their feeling of mutual distrust has disappeared, a feeling of mutual friendship has developed among them, and thus, real fraternal co-operation between the peoples has been established within the system of a single federated state.

"As a result, we now have a fully formed multinational Socialist state, which has stood all tests, and the stability of which might well be envied by any national state in any part of the world."

To Soviet people, the amity of nations is the most sacred and most indispensable condition for the further success of Socialism. The most gifted artists and writers devote their works to the idea of internationalism and the brotherhood of peoples in the Soviet Union. These works reflect the thoughts and sentiments of the millions.

The Dungans, a people inhabiting the approaches to the central range of the Tian-Shan Mountains in Central Asia, have a fine saying expressing the idea of the fraternal friendship of the people:

"The bonfire will burn brighter if all the twigs are put together."



## CHILDREN IN THE LAND OF SOCIALISM

*By A. Makarenko*

ORDER OF THE RED BANNER OF LABOUR. AUTHOR OF THE  
"PEDAGOGICAL POEM"

I WORKED as a teacher in an elementary school before the Revolution and have been working among children ever since the Revolution. The great changes which have taken place in the life of the people inhabiting the territory of the former Russian Empire in the last twenty years naturally inspire one to compare figures. But when we come to examine the situation of children, statistical comparisons seem to lose their impact on the mind, so great is the disparity between the old and the new. If, for instance, we say that the number of secondary schools in the countryside has grown by 19,000 per cent in the last twenty years—nineteen thousand per cent!—statistical comparison in this case can hardly be grasped by the mind and defeats its own purpose.

Tsarist Russia, as all the world knows, was a purgatory for little children. Behind other countries in general progress few could exceed her figures for child mortality. The cause of this high mortality was the low level of subsistence of the overwhelming majority of the population, the vicious exploitation of the workers in the towns, the dire poverty of the peasants in the countryside and the employment of juveniles for adult labour.

The situation is radically different today. Compared with 1913 the national income of the Soviet Union has increased fivefold. As a result of the elimination of exploiting classes the whole income accrues to the benefit of the people, whose standard of living is rising steadily year by year. In spite of the phenomenal increase in industrial output and the great demand for labour power, the Soviet law forbids the employment of children under the age of fourteen, and forbids the employment of young people under seventeen years of age in mines or at any occupa-

tion that may be harmful to the health. Children from fourteen to sixteen years of age may be allowed to work only by special permission of the factory inspectors. They have a four-hour day and work under the guidance of experienced instructors. That explains why you will never see a Soviet youngster suffering even the slightest degree of fatigue. You will never see that blighted look that comes from long continued overwork.

This of course does not mean that children in the Soviet Union are brought up to be idle and irresponsible. On the contrary, we expect rather a lot from our children: we expect them to be good pupils at school, we expect them to develop themselves physically, to prepare themselves to be good citizens of the U.S.S.R. when they grow up, to know what is going on inside the country, what our society is striving for, where it is making progress and where it is still behind. We promote the general and political development of the children, help them to be active and intelligently disciplined. But we have not the slightest occasion to use force against them, or cause them the slightest suffering. Our children cannot be conscious of the affection, solicitude and care which attend them at every step without being morally convinced of their duties, so that they fulfil their obligations willingly, without their becoming irksome.

Our children can see that all that they do is necessary not for the pleasure of their elders but for themselves, and for the whole future of our state. Soviet children are strangers to fawning and servility. They do not have to demean themselves to a taskmaster as to one who can make or break them.

Not only have children in our country never known what it is to be dependent on some other person, a master, proprietor, employer or patron, but adults have forgotten long ago. These are all things of the distant past. Our children better than anyone else feel the freshness in the air of our Socialist country. That is why they can study, develop and prepare for their future freely. That is why they are assured of their future, love their country and

strive to become worthy citizens and patriots of the U.S.S.R.

From the example of their parents and their whole environment they see that all careers are open to them, all pathways, success in which depends entirely on their diligence and honest endeavour in the classroom.

Soviet boys and girls finishing elementary school or secondary school have as many ways open to them as there are trades and professions; they have the right and the opportunity to choose any of them. There are no insuperable difficulties to hamper their choice. Boys or girls wishing to enter a college know they can leave for another town if necessary without having to worry about board and lodging, for every college has living quarters and every student is entitled to an allowance from the state whether he has parents or not.

Yet freedom is not the only advantage which our children enjoy from these intrinsic conditions of our social order. They are a stimulus to zeal in school-life and make them confident in the future.

Even in the first years of Soviet rule the Workers' and Peasants' Government set to work to solve the problem of the millions of waifs left destitute as a result of the imperialist war of 1914 and the armed intervention of 1917-21. At this time the young Soviet state had to contend with economic ruin, widespread famine and war on all its frontiers, even so, the first care of the Soviet Government was for the children. There were many homeless waifs—children who had lost their parents, relations or guardians, children of no fixed abode, adrift on the streets of our towns and villages.

But all of them grew up to be fine workers and good citizens. Soviet society gave each of them not only refuge and maintenance but education and the means to an honest livelihood. Many years have passed since our country put an end to juvenile vagrancy. In our factories and offices you will often meet former homeless waifs who are now holding positions of responsibility, respected by society and the people they work with.

If anything has been proved by the history of our struggle with the evil of juvenile vagrancy, the cause of so much gloating and slander on the part of our enemies, it is that Soviet society spares no effort nor resources where the welfare of children is at stake, and does so without lowering its respect for the individual. Only this can explain the remarkable fact that in spite of the great difficulties which sometimes arose in the course of our struggle on this front the Soviet Government never once resorted to juvenile prisons or corporal punishment. It preferred to rely upon education and congenial employment to help the waifs and strays to become worthy citizens of their country.

But the struggle to eliminate juvenile vagrancy was only a small part of the great work among children which Soviet society has accomplished in twenty-one years. The overwhelming majority of the population of tsarist Russia was illiterate. Everybody took it for granted that the ruling classes and the state power had no consideration for people, and for children even less. Such amenities as children's playgrounds, kindergartens and nurseries were unknown to the vast majority of people even by name. Soviet society had to create all these things literally from nothing.

At the present time even in the most remote regions of the Soviet Union the population sees from its own experience that care for the children is the prime concern of the Socialist state of workers and peasants. Thousands of schools have been built, scores of national alphabets have been created, new writers have developed, new teachers have been trained to educate peoples who before the Revolution had no written alphabet and often did not know what paper was for. Nurseries, kindergartens, children's clubs have become an indispensable element of Soviet life, and no one in the U.S.S.R. can imagine life without these institutions.

Under the Second Five-Year Plan (1933-7) 864 palaces and clubs were built for children, 170 children's parks and gardens, 174 children's theatres and cinemas, 760 centr:

for the technical and art education of children. More than ten million children are attending classes for technical and cultural education. From 1933 to 1938 20,607 new schools were built. In the U.S.S.R. elementary education has been made universal and under the Third Five-Year Plan (1938-42) high school education will be made universal in the towns and junior high school education will be made universal in the countryside. These figures show what great efforts are being made to give Soviet children happiness and a purpose in life.

The children's camps and other provisions for well-spent summer vacations are a striking example. At the end of the term the majority of children go off to the country to rest. Children's camps are organized by the state, by trade union bodies and by industrial enterprises. Every factory and office in the U.S.S.R. has the resources and the facilities to do so. Camps are organized in the vicinity of all cities and are particularly numerous in the southern parts of the Soviet Union—the Crimea and the Caucasus. In 1939 the summer camps accommodated some 1,400,000 children. Sometimes these camps are of the stationary, sometimes of the travelling type.

I myself, for instance, have made seven big trips round the U.S.S.R. with my children's commune. Having at its disposal tents, camp equipment and provisions, my commune has covered thousands of kilometres by rail, by water and on foot. We have rambled over the Crimea and the Caucasus, the coast of the Sea of Azov, through the Donbas. We have sailed on the Black Sea and the Volga. We have pitched our tents in Sochi, Yalta, Sevastopol, and on the banks of the Donetz. Everywhere we have been given a warm welcome by the local people, who have shown us round their factories, their children's institutions and their clubs. Nothing can equal holiday tours of this kind as a method of cultivating and educating the young mind. At the close of their studies at the high school, Soviet boys and girls have not only acquired learning but have stored their minds with impressions, a knowledge of people, their work and psychology.

But even in the winter time the development of Soviet children is not confined within the walls of the school. After school they go to children's clubs which, with every year that passes, are developing into first-class research and art institutes for juveniles in which any child can find assistance and a useful occupation if there is a spark of inquiry or originality in his mind.

Soviet children have a remarkable taste for mechanics. Among children between twelve and sixteen years of age it is almost impossible to find anyone uninterested in technical questions or ignorant of the principles of the most common machines. This avid interest in mechanics and engineering is not only catered for by clubs organized for the purpose, but by numerous technical journals and books published specially for children. These are of great value in assisting in the training of technical personnel for the young industries of the U.S.S.R.

In the army and navy, in the field of art, literature and politics the rising Soviet generation is proving at every step that the attention which is paid to children in the U.S.S.R. from their earliest infancy is already having its abundant reward.

## SOVIET YOUTH AT WORK AND PLAY

*By S. Sobolev*

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A SONG that is very popular in the U.S.S.R.—*Our Soviet Land*—has the following lines:

“To the youth now every door is open,  
Everywhere the old with honour go.”

And this is the plain truth, for in the Soviet Union man is considered the most valuable asset the world possesses.

The steady growth in the material welfare of the working people of the U.S.S.R. has ensured security for all. Young and old have no fear for the morrow. The aged are provided for by the state, which also affords every opportunity, backed by material aids, to the young people to whom all doors are wide open.

The Soviet Government is tireless in its efforts to ensure the maximum of care and attention to every working man and woman. The entire efforts of the country, of state and public institutions and Soviet industry, are aimed at improving the material conditions and raising the cultural standards of the working people.

The Soviet people know that the future belongs to the youth. That is why the rising generation, the heir to the vast wealth and traditions of the new Socialist society, is being brought up with so much care. The Soviet people affectionately call the younger generation their relay. Upon them will devolve not only the duty of consolidating the successes achieved by the Socialist society in which they now live but also that of building up a Communist society, that is, a society in which the principle: "From each according to his abilities, to each according to his needs," will be realized.

The older generation of workers, who began to work before the Revolution, when the factories were the private property of the capitalists, remember that one out of every three workers in tsarist Russia had to go to work when he had barely reached the age of twelve. Their working day then was half as long again as that established for adult workers in the Soviet Union. Boys and girls slaved away the same long hours as adult workers, and for much lower pay.

The laws in force in the U.S.S.R. have always stipulated that boys and girls from 14 to 16 years of age are permitted to work only 4 hours a day, and young people from 16 to 18 years—6 hours, with payment, however, equivalent to that of a full working day. The employment of juveniles under 17 years of age at hazardous occupations, or in mines and shafts, is prohibited.

Child labour up to 14 years of age is categorically forbidden.

Boys and girls from 14 to 16 years of age are allowed to start work only after receiving special permission from the Labour Protection Board. This implies that in the Soviet Union every care is taken that young people grow up physically strong and healthy and that they have every opportunity to study before they begin to work. How is this ensured in practice?

It is already several years since elementary education was made universal in the Socialist state. The task now confronting the government is to introduce universal secondary education within the next few years. In the last five years alone (1933-8) the number of elementary and secondary school pupils increased from 23 million to over 33 million. It should be mentioned here that in the U.S.S.R. education of every kind, from elementary school to university and college, is absolutely free. Moreover, university and college students receive allowances from the state.

In the Land of Soviets young people graduating from school are confident of their future. What to do, in what field to apply their talents, are questions which present no problem to them. Many school graduates enter universities, colleges or military schools. Those who desire to take up a trade are equally confident that their ambitions will not be baulked by the fear of unemployment and, what is more, that they can continue their education at any time they like.

It is already many years since unemployment was abolished for good in the U.S.S.R. Over 7 million young workers were employed in industry and agriculture in 1936. Young people up to 23 years of age comprise about one-third of the working class in the U.S.S.R. At many of the large factories and mills they represent half of the total number of workers.

The Soviet Government manifests constant care for raising the cultural level and technical skill of the youth. An extensive system of courses and study circles provides



a wide range of educational facilities enabling them to become proficient in their particular trade or profession.

A system of vocational training schools attached directly to the factories has been functioning in the Soviet Union for more than fifteen years. In these schools highly skilled workers for all branches of industry and the transport services are trained free of charge.<sup>1</sup> The pupils in these schools acquire a general education equal to that provided in secondary schools, and, under the supervision of qualified instructors, learn to become proficient in the trade they have selected. The vocational training schools are equipped with workshops, classrooms and experimental laboratories.

At regular intervals the pupils go through a course of practical work in the factories and mills under the supervision of engineers, technicians and competent foremen. Pupils are granted an allowance by the state during the entire period of study at the vocational training schools. Upon graduation they are immediately assigned to work in some factory or mill at their newly-acquired trade.

Since their foundation the vocational training schools have supplied the country with about 2 million skilled workers in various trades. Many of their graduates have since developed into master craftsmen, setting outstanding records of labour productivity.

The rapid growth of industry and agriculture created a tremendous demand for new intellectual forces throughout the country. This demand was met by a radical increase in the number of higher educational establishments and technical schools. In tsarist Russia there were only 91 higher educational establishments. The U.S.S.R. has 716 universities and colleges, with a total student body of 601,000, and over 2,500 technical schools, with twenty-four times as many students as in tsarist Russia. During the first two Five-Year Plan periods alone (1928-37) the technical schools gave the country 1,500,000 young technicians, children of workers, peasants and professional men.

<sup>1</sup> See note to p. 268.

Neither age nor birth, wealth nor connections, but only personal effort and personal abilities determine one's position in Soviet society.

According to Soviet law all citizens of the U.S.S.R. who have reached the age of eighteen enjoy equal rights in all spheres of the country's economic and political life. And the Soviet youth are making full use of the rights accorded to them.

The number of young engineers and technicians is increasing with every year. Thus, according to statistical data at July 1, 1937, 19 per cent of the total number of engineers and technicians employed in large-scale industry were young men and women up to 26 years of age.

Young workers, engineers and technicians of working-class and peasant stock are coming to the fore as executives and managers of industries, plants and railways. Young men and women under 30 years of age comprise 10.4 per cent of the total number of directors of various factories and plants, 18.5 per cent of the total number of chief engineers and 26.1 per cent of the total number of departmental managers.

The 28-year-old engine driver Pyotr Krivonoss—the initiator of the Stakhanov movement on the railways—is now the general manager of the South Donetz Railway, one of the largest trunk-lines in the country; Zinaida Troitskaya, who only recently was an engine driver, is now general manager of the Moscow Circuit Railway. Ognev, another young engine driver, is the general manager of the Dzerzhinsky Railway, and Shchegolev—still a very young man—is the director of the Trekhgornaya Textile Mills in Moscow.

In the Soviet Union young people with ability are being promoted boldly and in ever increasing numbers to leading posts. However, this does not mean that the country depends only on its young forces. The older forces too are highly valued in the Soviet Union, for they have the experience and knowledge that the younger forces often lack. The older forces are dwindling in number, while the younger forces are coming to the fore and rapidly

proving their worth. The policy adopted by the Soviet Government is to unite the efforts of the old and the young forces in building up the new state.

Figures to hand for June 1, 1938, show that 4,260 young men and women under 30 years of age have been decorated by the Soviet Government. These include 586 of the finest representatives of the younger generation who have been decorated with the highest distinction in the Soviet Union—the Order of Lenin. As many as 1,566 young people have been decorated for distinguished service in the development of various branches of industry and transportation.

In agriculture, too, the role played by young people, especially among the leading forces of the countryside, has grown considerably during the last few years. Young people are acquitting themselves with credit as chairmen of collective farms, brigade leaders, cattle breeders, agronomists, soil cultivation experts, and zootechnicians. More than 1,500,000 people, the overwhelming majority of whom are young collective farmers, have in recent years been trained as tractor drivers, harvester combine operators and truck drivers.

In the U.S.S.R. youth is no barrier to advancement in the scientific field. Soviet youth has in its ranks quite a number of talented scientists of world renown.

L. Pontryagin, although still a young man, is a professor of mathematics. G. Alexandrov, at 29, is a professor in the history of philosophy. E. Fyodorov, Doctor of Geography, who is only 28 years old, was one of the members of the Papanin group who spent nine months on the drifting North Pole station. The Soviet Government has conferred upon him the title of Hero of the Soviet Union. Those just mentioned are but three out of a list that runs into hundreds. Youth is no handicap. I myself, for instance, although only 29 years of age, am a professor of mathematics in Moscow University. Early this year I was accorded the honour of being elected a member of the Academy of Sciences of the U.S.S.R. I am the youngest academician in our country, and most probably in the whole world.

Among other notable representatives of Soviet youth are the prize-winners of international music contests. They include David Oistrakh (now a professor in the Moscow Conservatory of Music), Mikhail Fichtenholtz, Rosa Tamarkina, Emile Hilels, Yakov Flier and Maria Kozolupova.

The Soviet youth avails itself fully of its political rights.

"... all citizens of the U.S.S.R. who have reached the age of eighteen, irrespective of race or nationality, religion, educational and residential qualifications, social origin, property status or past activities, have the right to vote in the election of deputies and to be elected . . ." (Article 135 of the Constitution of the U.S.S.R.)

The finest representatives of the Soviet youth have been elected deputies to the Supreme Soviet of the U.S.S.R. and the Supreme Soviets of the Union and autonomous republics.

Among the members of the Supreme Soviet of the U.S.S.R. there are 284 young men and women under 30 years of age. In the Supreme Soviets of the constituent republics there are 1,009 young deputies, which constitutes 28.2 per cent of the total number of deputies. The Supreme Soviets of the autonomous republics have 692 young deputies, or 30 per cent of the total number of deputies.

The cultural level of our young people is rising with every year. Books, newspapers and periodicals have become a prime necessity to the broad masses of the working-class and collective-farm youth. Their ample earnings not only allow our young men and women workers to live in comfort, but also to be constant visitors to theatres, concerts, and museums.

The short working day enables the Soviet youth to make good use of their free time. They take an active part in literary, artistic, amateur theatrical, technical and other circles. In 1938, 56,000 young members of various

theatrical and choral circles participated in the review of folk art given by amateurs in Moscow.

Over 10 million young men and women are members of various sports societies. Soviet sportsmen have at their disposal 650 stadiums, 7,200 athletic fields, 350 aquatic sports stations, 2,700 skiing stations, 100 physical culture centres, 2,713 gymnasiums, etc. There were no stadiums at all in tsarist Russia. The very few athletic fields that existed were available only to people of wealth.

Thousands of young workers and collective farmers are taking to touring and mountain climbing. Young Soviet mountain climbers have scaled the highest peaks of the Caucasian mountain range and Central Asia. Tourists are provided at a small charge with all they require during their trips through the Soviet Union.

Young women enjoy equal rights with young men. Many young women are directors of industries and plants, scientists, and chief engineers in factories and mills. Six hundred and three young women have been decorated for distinguished service by the Soviet Government. Six hundred young women have been elected members of the Supreme Soviet of the U.S.S.R. and the Supreme Soviets of the constituent and autonomous republics. The title of Hero of the Soviet Union was conferred upon the world famous airwomen, Valentina Grizodubova, Marina Raskova, and the late Paulina Ossipenko, for their record-breaking non-stop flight from Moscow to the Far East.

In the Soviet Union marriage is a question which young men and women decide for themselves, without any constraint from any quarter. Consequently, such considerations as differences in social status, which in the Soviet Union no longer exist, or financial position, cannot in any way serve as a barrier. Coercion of any kind is punishable by law. In the Soviet Union a young woman is absolutely free in her choice of a husband, just as she may at her own free will sever marital relations.

A new generation has grown up during the period of Soviet rule, a young generation which has never experienced the capitalist system and capitalist-exploitation.

This young generation is public-spirited and self-disciplined, able to combine revolutionary zeal with American efficiency. This young generation is supremely devoted to its Socialist country. Service in the Red Army is regarded as a high honour, and young people gladly enrol in its ranks. The high sense of patriotism of the Soviet youth was strikingly evinced when the Japanese militarists attempted to encroach on the frontiers of the U.S.S.R. at Lake Hassan.

As is well known, the Japanese aggressor was severely tackled by the Soviet forces and, after suffering considerable casualties, was compelled to beat a hasty retreat.

The Soviet youth love their country above all else. And it is with good reason that the song which we mentioned in the first lines of this article concludes with the words:

“But if any foe should try to smash us,  
Try to desolate our land so dear,  
Like the thunder, like the sudden lightning,  
We shall give our answer sharp and clear.”

## WOMEN IN THE U.S.S.R.

*By P. Pichugina*

ORDER OF THE RED BANNER OF LABOUR. MEMBER OF THE  
SUPREME SOVIET OF THE U.S.S.R. CHAIRMAN OF THE TAGANSK  
DISTRICT SOVIET, MOSCOW

**W**OMAN in tsarist Russia had no rights whatever. She was disfranchised. The doors to government and civic activities were closed to her. The humiliating tsarist laws regulating marriage relations made a veritable slave of her. It was considered quite natural that there were more women than men among the illiterates.

The lot of the working class women was particularly joyless. It was the working woman, often a minor, who did the most unskilled and back-breaking work, for which she received a much lower pay than the man. Like the

man, she had to work ten and twelve hours a day; her life was one of semi-starvation, ignorance and want. Frequent periods of unemployment and savage exploitation were factors contributing to the break-up of the working class family.

Nor was the position of the peasant woman, who worked from dawn to dusk without a moment's respite, any better.

As for the women of the numerous smaller nationalities, their lot was the most miserable of all. Thus, for instance, the woman of the eastern regions of tsarist Russia was deprived of the most elementary human rights. She was forced to conceal her face with the *parandjah*, the traditional oriental veil. She was forbidden to sit at table with the men. The birth of a daughter was considered a misfortune, and if several girls were born to a family it was regarded as a disgrace.

The Great October Socialist Revolution emancipated woman, giving her full equal rights with man.

Article 122 of the Constitution of the U.S.S.R. declares:

"Women in the U.S.S.R. are accorded equal rights with men in all spheres of economic, state, cultural, social and political life.

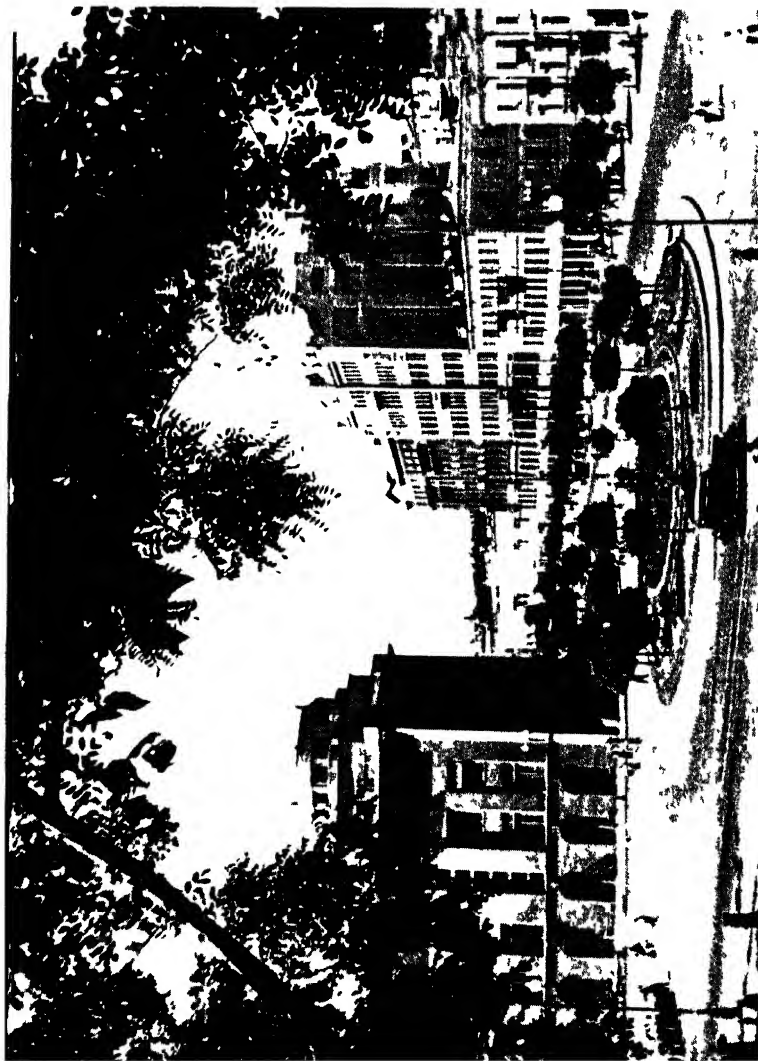
"The possibility of exercising these rights is ensured to women by granting them an equal right with men to work, payment for work, rest and leisure, social insurance and education, and by state protection of the interests of mother and child, pre-maternity and maternity leave with full pay, and the provision of a wide network of maternity homes, nurseries and kindergartens."

And Article 137 of the Constitution of the U.S.S.R. declares:

"Women have the right to elect and be elected on equal terms with men."

Women in the U.S.S.R. are ensured every opportunity of exercising the rights accorded them by law. There are

KIEV  
Square of the  
Third International







A KIRGHIZ  
COLLECTIVE  
FARM WORKER

an enormous number of women employed in all branches of the national economy of the Soviet Union today. During the period of the two Five-Year Plans (1928-37), the number of women gainfully employed increased from 3 million to 9 million. Moreover, the kind of work done by women has also changed.

In tsarist Russia according to the 1897 census, 55 per cent of the employed women worked as servants in the homes of big landowners, capitalists, merchants and rich government officials; 25 per cent were farm hands on large landed estates; 4 per cent worked in educational and public health institutions, and 13 per cent worked in industry or the building trades.

In 1936, 39 per cent of all the women employed in the U.S.S.R. were working in large-scale industry or the building trades, 15 per cent were employed in shops, stores, etc., transport and public catering establishments, 20 per cent were doctors or teachers, and only 2 per cent were domestic workers, or servants, to use the terminology of the old days. The remaining 24 per cent worked in various other branches of industry, science or the arts.

There are huge industrial enterprises in the U.S.S.R., like the Skorokhod Shoe Factory in Leningrad, for example, where 60 per cent of those employed are women.

To help women take an active part in production and in public life in general, the Soviet state has established numerous nurseries and kindergartens, where the mother can leave her child while she is at work.

In 1937 the nurseries and kindergartens of the Soviet Union (exclusive of seasonal nurseries and kindergartens) accommodated 1,800,000 children. The Third Five-Year Plan provides for the accommodation of 4,200,000 children by 1942. Seasonal nurseries and kindergartens established by collective farms during the farming season accommodated approximately 5,700,000 children in 1937.

Public dining rooms and the wide sale of ready-to-serve and ready-to-cook food also relieve the woman of a great share of her housework. There are over 30,000 public catering establishments in the U.S.S.R. In 1938 their

turnover amounted to 12,000 million rubles. The planned turnover for 1939 was 13,500 million rubles.

The Soviet working woman, like all working people in the U.S.S.R., has a seven-hour working day, and in many branches a six-hour day. The principle of equal pay for equal work, whether performed by women or men, is strictly observed. Like the man, the Soviet woman receives an annual vacation with pay, and if her health requires it, she receives a free vacation in a sanatorium or rest home.

Women are accorded public honour for good work or the attainment of greater proficiency or skill.

A number of professions which were regarded for centuries as being strictly "men's jobs" are now being "captured" by women. Before the Revolution, women were forbidden to hold positions of any importance on the railways. Now there are over half a million women working on the railways in the U.S.S.R., many of them occupying key positions. Among these women railway workers there are 400 station masters, 1,400 assistant station masters, and about 10,000 railway engineers and technicians.

Any Soviet working woman or collective farmer who has the desire and who shows the necessary organizational abilities has the opportunity of becoming the manager of any Soviet enterprise.

The U.S.S.R. has its women engineers, physicians, fliers, scientists and executives. There is no branch of industry, agriculture, science or art, and no phase of executive or government work in which women are not employed.

There are more than 100,000 women engineers and technicians employed in large-scale industry or in the building trades in the Soviet Union, whereas in all the other countries of the world combined there are less than 10,000 women engineers.

Tsarist Russia had 2,000 women physicians. In the U.S.S.R. there are 132,000 physicians today, over half of whom are women.

There has also been an enormous change in the use of female labour in agriculture.

Approximately 19 million women are now working in the collective and state farms fields. But they are no longer the oppressed and downtrodden peasant women, "the dumb tools," as Gorky expressed it, of the Russia of old. The collective farm system has completely emancipated woman, in the full sense of the word. The woman of the pre-revolutionary peasant family who worked from sunrise to sunset never knew how much she actually earned. Now every woman collective farmer is able to tell exactly how much she brings into her family. Data for 1936 show that women collective farmers accounted for over 35 per cent of all the work-day units.

Formerly it was considered that woman was capable of doing only the simplest kind of work, that she could be trusted with no more complicated tools than the sickle and the hoe. Today there are 1,500,000 tractor drivers and combine operators employed in Soviet agriculture, and among them many are women.

However, labour legislation in the U.S.S.R. takes account of the physical limitations of women and does not allow them to engage in work that is beyond their strength. Thus, for instance, Soviet law forbids the employment of women and young people below the age of 18 in industries which are considered hazardous to health. From the sixth month of pregnancy expectant mothers, as well as nursing mothers during the first six months of feeding their infants, are strictly barred from work on night shifts.

Besides the regular annual vacation, working women are entitled to a maternity leave of thirty-five days before birth and twenty-eight days after birth, with full pay. Women collective farmers are entitled to one month's maternity leave before giving birth and one month after, during which time they receive their average earnings.

Expectant mothers are transferred to lighter work before they go on their maternity leave, their pay remaining the same.

Nursing mothers are given not less than thirty minutes additional time off to feed their infants, at least every three and a half hours.

Soviet legislation on marriage and the family protects the interest of mother and child. In the Soviet Union marriage is a voluntary union of free and equal persons. Registration of marriages in the U.S.S.R. is encouraged both in the interests of the state and society as a whole and in order to facilitate the protection of the personal and property rights of the wife and the children. However, unregistered marriages are just as valid as registered marriages in the eyes of Soviet law. There are no "illegitimate" children in the Soviet Union, all children are accorded the same rights.

A marriage may be dissolved either by mutual agreement of the husband and wife, or at the desire of either one of them. In registering the divorce, the state establishes how much each of the parents must contribute to the support of the children and with whom the children shall live.

In 1936 the Soviet Government called on public opinion to assist in the discussion of a draft decree closely touching the interests and sentiments of all Soviet citizens. The purpose of the decree was to afford still better protection to mother and child, to protect women from the well-known detrimental effects of frequent abortions, to discourage any irresponsible attitude towards paternal obligations, and in general to strengthen the family.

The new decree proposed the prohibition of abortions, with the exception of cases in which the pregnancy endangers the life or health of the woman, or where there is a danger to the child of inheriting some disease from its parents. In addition the decree proposed tightening-up of alimony and divorce legislation.

After a broad nation-wide discussion on this draft decree, it was adopted by the government in conformity with the express desire of the population.

Only under Socialism, the system where there is no exploitation and where the constant improvement of the

material welfare of all the working people is a law of social development, is it possible to carry on a serious struggle to strengthen the family.

The enactment of this decree was made possible by the complete elimination of unemployment in the U.S.S.R., by the economic independence of women, by the increased material welfare of the entire population, by the fact that the child is secure and can look forward to an assured future.

With the enactment of this law, the Soviet Government assigned enormous sums as benefits to mothers of large families.

Upon the birth of her seventh child the mother receives a benefit of two thousand rubles annually until the child is five years of age, and the same amount on the birth of every subsequent child. Mothers of ten children receive five thousand rubles on the birth of every subsequent child, and three thousand rubles annually to the fifth birthday of the child.

From the day the law prohibiting abortions went into effect (June 27, 1936) to the present time, the state has paid out 2,000 million rubles in benefits to mothers of large families.

The law fully achieved its aim—the strengthening of the family. There has been a sharp decline in the number of divorces. For example, in Moscow in 1936, 16,182 divorces were registered, whereas in 1937 this number declined to 8,961. In 1936, 71,073 children were born in Moscow, whereas in 1937, 135,848 children were born.

The Soviet woman is eager to acquire knowledge, to learn, and the Soviet Government helps her to study in every way. During the years of Soviet rule, 40 million adults, among whom there are many women, were taught to read and write. And many of these people did not rest content with mere literacy, but continued their studies further in the various schools for adults.

Today women have access to the numerous colleges and universities of the U.S.S.R. Of the 601,000 college and university students in the Soviet Union, 43 per cent are

women. The percentage of women students training as teachers and in medical schools is even higher.

The Soviet woman takes great interest in sports and athletics. Over half a million young women have passed athletic tests which entitle them to wear the GTO Badge (Russian initials for "Prepared for Labour and Defence"). Over 100,000 women proudly wear the Voroshilov Badge for marksmanship. Soviet sportswomen hold a number of world records, particularly in parachute jumping and flying.

In tsarist Russia, prostitution was widespread and legalized by the government. Prostitution has been completely wiped out in the U.S.S.R. Nor has it been abolished by means of police legislation, but by life itself, by the economic security and complete independence of the Soviet woman.

Participation in the constructive work of the country has given the Soviet woman more than economic independence. It has given the woman equal rights with man to administer the state. There are 189 women among the members of the Supreme Soviet of the U.S.S.R. Among the members of the Supreme Soviets of the Union Republics there are 848 women, and 578 women are members of the Supreme Soviets of the Autonomous Republics. Over 1,500,000 women actively participate in the work of Village and City Soviets.

Tens of thousands of women in industry have become Stakhanovites, introducing new and better methods of work. Thus, for instance, the textile workers Evdokia and Maria Vinogradova, bold fighters for high labour productivity in their industry, are extremely popular and honoured by the whole country.

It was the women collective farmers who won the honour of achieving the highest yields of sugar beets. The Socialist competition for high sugar beet yields was started by Maria Demchenko, a collective farmer. She started out by attaining as much as 50 tons of sugar beets per hectare (2.47 acres). Now there are collective farm women in the Soviet Union who harvest as much as 100 tons of sugar beets per hectare.

In 1936, Pasha Angelina, a collective farm tractor driver, initiated a movement for the best woman tractor driver. Thousands of women tractor drivers and combine operators are now competing for this honour. In 1937, 250 of the best brigades of women tractor drivers ploughed an average of 1,838 acres of land per 15-h.p. tractor, whereas the average amount of land ploughed per 15 h.p. tractor in the Soviet Union was 1,015 acres.

The Soviet people have every right to pride themselves on women like Valentina Grizodubova, the late Paulina Ossipenko and Marina Raskova, fliers who displayed such heroism and such superb mastery of the art of flying in their long-distance non-stop flight from Moscow to the Far East. With this flight these Soviet airwomen established a long-distance non-stop flight world record for women.

Among the People's Commissars in the Soviet Union there are twelve women, including Paulina Zhemchuzhina—People's Commissar of the Fish Industry of the U.S.S.R., Qubra Faradzheva—People's Commissar of Public Health of Azerbaijan, and Bakhty Altibayeva—People's Commissar of Light Industry of Turkmenistan. One of the Vice-Chairmen of the Council of People's Commissars of the U.S.S.R. is a woman—Rosalja Zemlyachka.

There are 12,500 women \*scientific workers in the U.S.S.R. Recently Dr. Lena Stern, the author of over 300 papers on physiology and biochemistry, was elected to membership of the Academy of Sciences of the U.S.S.R.

The author of these lines has herself traversed the path from unskilled worker to Member of the Supreme Soviet of the U.S.S.R.

I entered a kolkhoz (collective farm) in 1929, but after a short time I left for Moscow to join my husband. This was in 1930. Within a year I began to work on the construction of the new ball-bearing plant in Moscow as a common labourer. I studied hard and diligently, and soon became a skilled worker. In 1932, after the plant was completed, I was made foreman in the ball-bearing assembly shop.



Within two years the workers of our factory had elected me as their deputy to the Moscow Soviet. I still continued to work in the factory. The Soviet Government decorated me with the Order of the Red Banner of Labour for distinguished service at work.

At the beginning of 1937 the voters of my district, that is, the district where our factory is located, elected me chairman of the District Soviet. Shortly after, the people imposed a further trust on me and elected me Member of the Supreme Soviet of the U.S.S.R. I was nominated simultaneously by four factories. But recently an unskilled working woman, I now take an active part in administering the country.

The work of chairman of a District Soviet is no easy task. One must be a builder, an architect, an executive and a financier. The Budget of our District Soviet amounts to practically 37 million rubles. The care and laying out of parks and greens, garbage disposal and street cleaning, road building, the local industries, public baths and laundries and a host of other public works all come under the immediate jurisdiction of the District Soviet. In addition to my duties as chairman, I supervise the work of the District Planning Department, the Department of Public Education, under which there are forty-six schools, and the District Board of Health.

Nor am I the only woman in the U.S.S.R. to fill such a post. The Soviet Union has many such women to-day—and will have still more.

The position of women in the U.S.S.R. is the most convincing argument against the fascist theory of the "inaptitude" of women, of their theory that women are fit only to raise children and tend to the house.

The great Russian democrat of the past century, N. Chernyshevsky, who did so much for the cause of education in Russia wrote:

"With what a true, powerful and penetrating mind nature has endowed woman; and this mind remains of no use to society, which spurns it, crushes it, smothers it,

although the history of mankind would progress ten times as rapidly if this mind were not spurned and killed, but were exercised."

In the U.S.S.R. the mind and ability of the Soviet woman are exercised in the interests of society and consequently in the interests of the woman herself.

## HOW OLD AGE IS PROVIDED FOR

*By M. Shaburova*

ORDER OF THE RED BANNER OF LABOUR. PEOPLE'S  
COMMISSAR OF SOCIAL MAINTENANCE OF THE R.S.F.S.R.

**I**N the Soviet Union all working people have the right to maintenance in old age. Every man who has reached the age of 60 and has worked for not less than 25 years, and every woman who has reached the age of 55 and has worked for not less than 20 years receives a pension irrespective of his or her capacity to work and earnings.

At the same time thousands of incapacitated workers and other employees receive disability pensions before reaching pension age. If disability is the result of injury sustained at work or an occupational disease a pension is granted irrespective of length of working service.

On reaching old age, people engaged in work underground or deleterious occupations are pensioned at 60 per cent of their last earnings; persons employed in heavy industry receive 55 per cent of their earnings, and those employed in light industry receive 50 per cent.

Certain increases are made according to the length of uninterrupted service at the same place of work. People employed in underground occupations and deleterious trades receive an extra 10 per cent for 3 to 5 years' service, 20 per cent for 5 to 10 years and 25 per cent for over 10 years.

Persons employed in the metallurgical industries,

machine-building, electrical engineering, mining, the oil industry, the basic chemical and rubber industries, railway and water transport and industrial enterprises auxiliary to the post and telegraph service receive an increase of 10 per cent for 4 to 8 years' uninterrupted service at the same place of work, 15 per cent for 8 to 12 years and 20 per cent for over 12 years.

For all other workers and employees the increase is fixed at 10 per cent for 5 to 10 years' uninterrupted service, 15 per cent for 10 to 15 years, and 20 per cent for over 15 years.

Persons who have grown old in the service of science are pensioned at higher rates.

Scientists in the institutes of higher education, who have worked for not less than 25 years, ten of them under Soviet rule, receive a life pension equal to the salary received in their last appointments.

Teachers and other educational workers, likewise agronomists, doctors and veterinary surgeons, who have been practising for not less than 25 years, receive service pensions amounting to 50 per cent of their earnings.

Legislation on old age insurance by the state was introduced at the very inception of the Soviet Government. Great developments in this field were made during the First and Second Five-Year Plan periods. Suffice it to say that in 1938 over 3,000 million rubles of the state budget were assigned for social welfare.

But the state does not confine its provision for the old and incapacitated to pensions. The government also expends huge sums on various services for pensioners. It provides treatment in sanatoria and health resorts, maintains homes for the incapacitated, provides them with artificial teeth and surgical appliances, finds suitable work for them, teaches them new trades and subsidises their benefit societies.

A large number of palatial mansions, which formerly belonged to the royal family and the old nobility, have been put at the disposal of aged pensioners. The great palace built by Prince Kochubei in Tsarskoye Selo near

Leningrad is now a nursing home for the old and incapacitated. Similar use has been made of the Shcherbatov estate in the Moscow Region, the Davydov estate in the Western Region, the Sheremetyev estates and the estates of many other counts and princes.

Many homes for the incapacitated have farms attached to them where the inmates engage in bee-keeping, poultry farming, market gardening and similar work on a voluntary basis.

In all these homes ample provision is made for entertainment and education. The inmates are well supplied with newspapers and periodicals, and are entertained with theatrical performances, moving pictures and concerts.

A large number of hospitals have been organized for incapacitated persons and the aged. There are special sanatoria, notably at Sochi, the "Soviet Riviera" on the Black Sea coast, at Kislovodsk, a world-famous resort, at Yalta and other first-class resorts.

The Soviet Government has established a special system of co-operative enterprise under which aged or partially disabled persons can engage themselves in useful occupations in easy conditions. At the present time about 200,000 people are co-operating in this form of enterprise and in 1938 their gross turnover exceeded 3,000 million rubles. The average wage in these co-operatives is 300 rubles per month, while tens of thousands of incapacitated persons earn from 400 to 500 rubles a month.

In addition the old folks and invalids congenially occupied in these co-operatives have their own insurance societies which supplement the benefits they receive from the state.

In 1938 these societies spent about 58 million rubles on services to their members. The sum of 15,700,000 rubles was spent on sanatoria and health resort treatment and rest homes alone and about 10 million rubles on the welfare of the members' children.

In the U.S.S.R. the peasantry too are guaranteed security in old age as well as the urban population.

The average peasant lived a hard life before the

Revolution. But old age was even worse. An old peasant was a burden to the family, an extra mouth to feed. When he died, it was a good riddance.

"Old age is a plague," says an old Russian proverb which is never heard nowadays.

Collectivization has completely transformed the life of the peasantry. The homeless peasant, the aged paupers and cripples begging from village to village are things of the past.

Collective farmers who are unable to work because of old age or physical disability are provided for by the benefit societies.

Under the Collective Farm Rules the collective farms contribute 2 per cent of the gross income to their mutual aid funds, thus creating large public funds for the maintenance of the aged and disabled. The functions of these societies are numerous and various. They organize and maintain rest homes and homes for aged collective farmers. In 1937 and 1938 alone about 150 million rubles were spent for these purposes.

Take the old folks' home for peasants in the Petrovsky District, Orjonikidze Territory. This home, which accommodates 24 old peasants, has a substantial farm with a market garden, an orchard, cows, calves, horses, hogs, sheep, geese, and other livestock. These old folks lack nothing.

Every citizen in the U.S.S.R. irrespective of age has the right to employment.

The shortness of the working day, the great expenditure on safety devices and on labour protection, the employment of modern machinery in industry and agriculture, the system of yearly vacations with pay and the fact that everyone feels that he is working for himself, has made work easier and congenial. That is why in many cases people well on in years and receiving pensions from the state sufficient for a serene old age, gladly continue to work at their jobs. They receive their pension in full as well as their wages.

"I am now 62 years old," says Fyodor Kostromin, a miner employed in the Donetz coal fields, "but I don't

feel myself an old man yet, although the Soviet Government has put me on an old-age pension—327 rubles a month. I am still working in the pit and draw 850-900 rubles. Some months I earn more than 1,000 rubles. The municipal bank has advanced me a ten-year loan of 3,000 rubles returnable by instalments to build a house. Now I have a large, light, well-built house of my own.”

Collective farmers, too, insist on working to a ripe old age when they could be resting at their ease. These old men and women are always ready to do some light work. They are held in great esteem. The old men are generally elected to the position of farm inspectors or other responsible offices.

Citizens who have grown old in the service of industry and science are admired and esteemed by all in our country.

In the words of the song:

“Youth has opportunity,  
And age is honoured everywhere.”

Maintenance in old age is ensured by law embodied in the Constitution.

Article 120 of the Constitution of the U.S.S.R. declares:

“Citizens of the U.S.S.R. have the right to maintenance in old age and also in case of sickness or loss of capacity to work. This right is ensured by the extensive development of social insurance of workers and employees at state expense, free medical service for the working people and the provision of a wide network of health resorts for the use of the working people.”

## PUBLIC HEALTH PROTECTION

*By Professor N. Propper-Grashchenkov*

ASSISTANT PEOPLE'S COMMISSAR OF PUBLIC HEALTH OF THE  
U.S.S.R. CORRESPONDING MEMBER OF THE ACADEMY OF  
SCIENCES OF THE U.S.S.R.

**E**VERYTHING connected with public health in the U.S.S.R. is in the hands of the state and is provided for by the state budget. This includes prophylactic and

epidemiological establishments (institutes, laboratories, sanitation centres, and the like), medical establishments (hospitals, dispensaries, clinics, sanatoria, health resorts, maternity homes, and the like), children's establishments (nurseries, child health centres, children's hospitals and sanatoria), medical science (scientific research institutes, laboratories), medical schools and the medical supplies industry.

The entire medical staff of the country, physicians, nurses, pharmacists, scientists, and professors—is in the employ of the state. The state provides the physician and the scientist with working conditions most suitable to their activities, placing at their disposal all the latest achievements of medical science and technique. The state assists the physician to increase his knowledge and skill by sending him at given intervals to special medical institutes and scientific research establishments so that he can keep in touch with the latest developments in medical science.

There has been a great increase in the number of physicians since the establishment of Soviet power—132,000 in 1937 as against 19,785 in tsarist Russia in 1913. Today there are approximately two and a half times as many physicians in rural districts as there were before the Revolution. The increase in the number of physicians has been even more striking in the republics of the non-Russian nationalities. In Azerbaijan, for example, there were 291 physicians before the Revolution, whereas there are 2,480 today; in all of Tajikistan there were only 13 physicians, now there are 372.

In 1937, 10,300 million rubles of the state budget were assigned for public health work. This sum is almost seventy-five times as large as the 1913 public health budget of tsarist Russia. The per capita expenditure for medical purposes in 1913 was only 90 kopeks; today this sum has increased to 60 rubles.

Like every other phase of economic and cultural life in the Soviet Union, public health work proceeds according to a definite plan. The establishments, staffs, scientific

and everyday work of medical institutions and organizations are all planned. At the beginning of every fiscal year, the People's Commissariat of Public Health of the U.S.S.R. together with the people's Commissariats of Public Health of the various republics and the local Boards of Health determine where hospitals, polyclinics, maternity homes, nurseries, sanatoria, scientific institutes, medical schools, and the like are needed and how many should be built. At the same time, the most important tasks for the coming year are also determined.

The fact that all public health work is centrally directed makes possible the proper utilization of all the facilities of the country, the wide-spread application of the latest achievements in medical science, and unified methods of work. The medical establishments and organizations of the Soviet Union are not isolated, insular institutions, but are closely interconnected and work according to a common plan of preventive and curative measures.

The entire public health system of the Soviet Union is based on preventive medicine. Efforts and means are directed primarily towards preventing illnesses and safeguarding the population against sickness.

The public health system includes numerous and wide-spread specialized sanitary organizations which engage in work in the field of industrial hygiene and labour protection, housing and municipal sanitation and food hygiene, and which combat epidemics. There is an extensive network of scientific research institutes of hygienics, sanitation centres and laboratories which serve as bases for the hygienists in their prophylactic work. However, it is not these sanitary organizations alone that concern themselves with prophylactic measures. The entire Soviet public health system concerns itself with the work. Even the establishments for treating ill people, and therapists, base their activities on preventive medicine. For this reason hygiene is a science that is particularly widely taught in all medical schools.

Public organizations of the working people do much to assist the public health institutions. Every City and



District Soviet has its Board of Health. Hospitals and prophylactic institutes have the co-operation of public commissions. Sanitary commissions are organized in apartment houses: collective farms have their sanitary inspectors. The members of these commissions and the inspectors are elected by the local population and go through special training courses in the Hygiene Educational Centres.

These commissions and collective farm inspectors keep a check on the work of medical establishments, and assist the latter to carry out prophylactic measures by interesting the public in questions of health protection and making them conscious of the necessity of observing the rules of hygiene at home and at work. Hygiene Educational Centres were first introduced by the Soviet Government. They supervise all educational work in the field of hygiene in their district. They publish posters and pamphlets, show moving pictures, arrange exhibitions, distribute literature, organize lectures on hygiene, etc.

Soviet public health work has been so efficacious because of the very nature of the social and state system existing in the U.S.S.R. in which unemployment, destitution and poverty have been permanently done away with on the basis of the abolition of the exploitation of man by man. In a remarkably short period of time the Socialist state has succeeded in raising the material and cultural level of the entire population enormously, thereby laying a firm foundation for successful work in the field of public health.

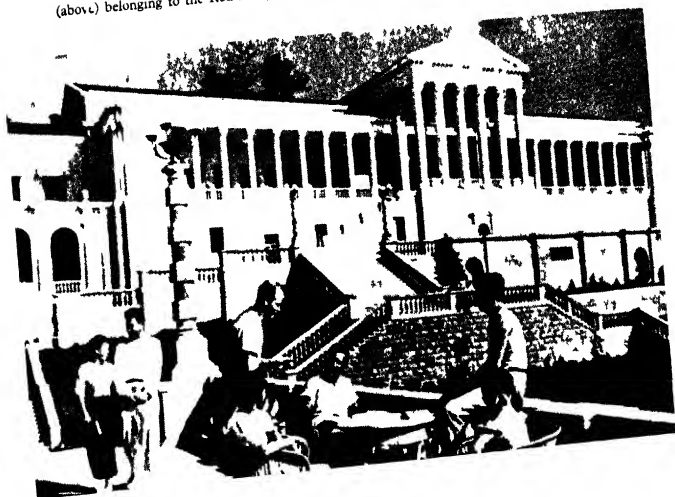
The reconstruction of industry and agriculture on the basis of modern machine technique has been effected in full accordance with the scientific requirements of industrial hygiene and sanitation. The construction of new cities and the reconstruction of the old ones are also being carried on in conformity with these requirements. Thus, for example, before the Revolution there were 222 cities that had water mains and 33 that had sewer systems, whereas by 1938 there were 384 and 112 respectively.



# SANATORIA AT SOCHI

(above) belonging to the Red Army and Navy

(below) for Workers in Heavy Industry



THE WALL  
NEW SPAPER  
In a Moscow  
School



THE WALL  
NEW SPAPER  
In a Moscow  
School

Incidentally, it should be borne in mind that even in those cities of tsarist Russia where there were water mains and sewer systems, these facilities existed only in the central districts of the city, where the wealthy people lived. The water mains, sewer and electric lighting systems did not extend to the city outskirts and slums, where the working class population lived.

Slums have long since been wiped out in the cities of the Soviet Union, and the suburbs have been transformed into well-appointed neighbourhoods which in many cases surpass the central districts both as to municipal improvements and architectural layout.

Public utilities are being widely introduced in collective farms (*kolkhozes*). Thus the Armenian Soviet Socialist Republic has installed 34 water mains in the rural districts, having a gross length of 99.5 miles and serving 53 villages with a population of 108,640. The Daghestan Autonomous Soviet Socialist Republic has constructed 138 water mains in rural districts and an additional 23 are now in the process of construction. The Tatar Autonomous Soviet Socialist Republic has built 38 water mains in the countryside and is building 9 more. Prior to the Revolution, these Republics did not have a single water main.

During the years of Soviet rule, approximately 646 million square feet of housing space have been built in the cities and towns alone.

Another outstanding achievement is the great increase in the quality and quantity of foodstuffs placed on the market. In 1938 the Soviet food industry produced 14,800 million rubles worth of food products, about six times the output of the food industry of tsarist Russia. As a result of the measures taken by the state, a great variety of nutritious food products is available to the entire population.

The change in the nutrition value of the food consumed by the Soviet public today can be seen from the following table:

*Per capita food consumption by workers and other employees in*

1937 (1932=100)	
<i>Food Group</i>	<i>Percentage</i>
Black bread . . . . .	71.0
Wheat bread . . . . .	176.7
All high-grade breads . . . . .	125.8
Fruits and berries . . . . .	316.2
Ham, bacon and other cured meats . . . . .	490.0
Lard . . . . .	187.3
Butter . . . . .	301.6
Eggs . . . . .	208.4

There has been a corresponding increase in the dietary standard of the rural population. According to data covering the budgets of collective farmers from 1933 to 1937, the per capita consumption of meat, fish, fats, sugar and confectionery more than doubled in these four years.

The per capita consumption of proteins in the U.S.S.R. today is over 100 grams a day, as compared with 35-40 grams in Germany, for instance.

Approximately 20 million people avail themselves of the services of public catering in the U.S.S.R. Public dining rooms and restaurants have special dietetic tables as well.

At the same time, the wages of the working people are constantly rising. The national payroll has increased from 34,953,000,000 rubles in 1933 to 96,425,000,000 rubles in 1938. The average annual wage of a worker in industry was 1,533 rubles in 1933 and 3,447 rubles in 1938.

The Constitution of the U.S.S.R. guarantees the working people of the U.S.S.R. the right to free medical services, security in old age, maintenance in the event of loss of working capacity or illness, and the right to state protection of the interests of mother and child.

All medical service—from first aid to the most intricate surgical operation—is rendered free of charge to the working people of the Soviet Union.

All forms of medical aid—the most up-to-date methods

of diagnosis and treatment, laboratory analyses, X-rays, physiotherapeutic treatment, hospital treatment and sanatorium cures, radiotherapy, maternity home services where methods of painless deliveries have been developed, dental treatment, the provision of orthopædic appliances, etc.—are available to the Soviet working people and their families without cost.

The Soviet citizen is given the care of the public health establishments from the very day of birth. As soon as a child is born he is registered in his district child welfare centre. This means that he will be under the constant supervision of a doctor. The mother will be instructed in the care of the child, its routine, diet and proper upbringing. The child will be vaccinated and inoculated against contagious diseases, and in case of illness provided with medical aid at home or in a children's hospital.

The child welfare centres do not wait until they are applied to for assistance. The doctors and nurses of the centres visit the child at home, acquaint themselves with his living conditions and advise the parents on the care of the child.

In all tsarist Russia there were only 9 child and maternity welfare centres. Today, there are 4,384 child and maternity welfare centres in the U.S.S.R. Dairy kitchens are attached to these child welfare centres. Here babies receive the necessary dairy products according to the doctors' prescriptions; sick children receive special prescriptions.

Infants from the age of twenty-eight days are accepted in nurseries. The mother may leave her child in the nursery when she goes to work. Here the child is under the supervision of doctors and trained nurses. Besides the regular nurseries, seasonal nurseries are established in the rural districts during the farming season. In 1937, Soviet nurseries (including the seasonal nurseries) accommodated about 4 million children. The nurseries accept children until the age of three and a half. Children up to this age are most susceptible to all sorts of illnesses and contagious diseases. For this reason the nurseries are under the

jurisdiction of the People's Commissariat of Public Health. Children over three and a half years of age are accepted in the kindergartens, which are under the jurisdiction of the People's Commissariat of Education.

The number of establishments for the health protection of mother and child is increasing with every year. Within three years alone their budget increased more than three times over and in 1937 reached a sum total of 1,371 million rubles.

Maternity welfare centres, of which there are 4,384 in the country, afford medical supervision to expectant mothers, who register in these centres during their very first months of pregnancy. Here they are given medical advice at government expense.

Working women and all other women employees receive thirty-five days' maternity leave before confinement and twenty-eight days after, during which time they receive full pay. The maternity centres direct the expectant mother to a maternity home for her confinement.

In 1937 there were over 120,000 beds in lying-in hospitals in the U.S.S.R., whereas there were only 6,824 in tsarist Russia. A large number of scientific and practical institutions have been established in the Soviet Union for work in the field of obstetrics.

Children receive medical aid in children's polyclinics, dispensaries and hospitals. Recently the First Children's Polyclinic in Moscow observed its twentieth anniversary. This Polyclinic was established on the first anniversary of Soviet rule. It has a staff of 70 physicians and specialists. From 500 to 600 children are received here daily. It has Roentgen and physiotherapeutic departments, its own laboratory and a sanatorium with 70 beds, where children receive treatment during the day, returning to their homes for the night.

In the old days there were no such establishments whatever. It is only under Soviet rule that such establishments were set up in the country. Now every part of the Soviet Union has its children's hospitals and clinics.

All children and adolescents undergo an annual medical

examination in the spring. At this time children who need to be sent to rest homes and sanatoria are selected.

In 1938 over 400,000 children and adolescents took cures in children's sanatoria, and about 2 million school children and hundreds of thousands of children of pre-school age spent their summer vacations in health camps.

The enormous expenditure on kindergartens, nurseries, maternity homes, dairy kitchens, sanatoria, summer camps and rest homes for mother and child have had splendid results.

During the years of Soviet rule, child mortality has declined by over fifty per cent. The chest expansion of Soviet children as compared with the children of tsarist Russia shows an average increase of one inch, and their height has increased by an average of one and a quarter inches. Thus, for example, adolescents employed in the Kolomna Works were from one and three-quarters to two and a half inches taller and weighed eleven and a half pounds more in 1937 than in 1925.

Of great state importance in the U.S.S.R. is the persistent work done to prevent industrial accidents, since this work is directed towards safeguarding the life and health of the working man himself, the most valuable asset in the Soviet Union.

A number of institutes which deal specially with industrial accidents and orthopædics have been established in the Soviet Union. These institutes constitute methodological centres both for the study of industrial accidents and the means of combating them, and for training personnel to carry out the latter work.

As a result of the constantly increasing introduction of automatic machinery in industry and the compulsory use of safety measures and appliances, there has been an enormous decrease in industrial accidents in the U.S.S.R.

In this connection it is interesting to note that among the most progressive and advanced workers, who participate in the Stakhanov movement and who display high labour productivity, industrial accidents are for the most part far less frequent than among the other workers.



The widespread establishment of first aid stations both in factories and in collective farms, as well as the fact that people who sustain injuries at work have free access to further treatment, has led to a sharp decline in the harmful consequences resulting from industrial accidents.

Health stations in factories and other places of work, first set up under Soviet rule, are extremely important factors in creating healthful labour conditions and combating industrial accidents. There are 7,631 such stations in the U.S.S.R. today. They render medical aid and carry on health protection work—check up on the sanitary conditions of the given enterprise, introduce measures for decreasing illness and accidents, treat workers who are taken ill, select people to be sent to health resorts, rest homes and sanatoria, and those in need of special diets in dietetic restaurants.

Workers requiring more skilled or special treatment are sent by these stations to the district polyclinic or dispensary. The polyclinics are staffed with specialists in all the principal branches of medicine; they have all sorts of medical appliances, provide physiotherapeutic and X-ray treatments and have their own laboratories.

There are seven and a half times as many polyclinics in the country since Soviet rule, and they accommodate ten times as many patients.

Some urban polyclinics handle between 1,000 and 4,000 patients a day. The Central Railway Workers' Polyclinic in Moscow has a medical staff of about 1,000, of whom 400 are physicians.

A certain zone in the district where the polyclinic is located is assigned to every therapist in the polyclinic. The physician serves the population of this territory. He receives the people living in the zone assigned him in the polyclinic and visits them at home. But this family physician is in an incomparably better position than the former private practitioner of tsarist Russia. He has all the latest achievements of medical science at his disposal, X-ray apparatus and laboratories. He can send his patient to any specialist in the polyclinic or call out a specialist to

the home of the patient for consultation purposes; he can send the patient for a course of physiotherapeutic treatment and he can avail himself of the services of a well-trained staff of medical workers.

In capitalist Russia tuberculosis and venereal diseases were extremely widespread among the workers and peasants as a result of the severe exploitation of the working people, unemployment, poverty, the downtrodden and oppressed position of women and the insanitary condition of the workers' quarters. The medical profession was powerless to combat these illnesses.

The Socialist system has done away with the social conditions that give rise to these evils. The public health institutions of the Soviet Union with their 5,000 physicians for venereal diseases working in 2,225 medical institutions have succeeded in greatly curtailing venereal infections. Thus, there are only one-tenth as many syphilitic cases in the U.S.S.R. as there were in pre-revolutionary Russia, and new cases of syphilis are extremely rare. The principal source for the spread of syphilitic infection in tsarist Russia was prostitution (54.7 per cent of all cases). There is no prostitution in the U.S.S.R. since Socialism, having wiped out unemployment, poverty and destitution, thereby eliminated the economic causes giving rise to prostitution. Thus, in 1935 there was not a single case of syphilis among the young men called up to serve in the Red Army from the large cities, towns and collective farms of the principal industrial and agricultural regions of the U.S.S.R. .

Just as great progress has been made by the Soviet public health institutions in the fight against tuberculosis, which has decreased by 83 per cent since Soviet rule was established. In the large cities of the U.S.S.R., mortality due to tuberculosis has been reduced to less than half of what it was in pre-revolutionary Russia. Particular attention is devoted to combating tuberculosis among children. For this purpose not only have children's tuberculosis sanatoria been established, but special tuberculosis preventative schools, children's camps and health grounds have been built all over the Soviet Union. There are over

one thousand dispensaries for carrying on preventive work among people prone to tuberculosis and for treating tuberculous cases, whereas not a single institution of this kind existed in tsarist Russia.

Urban hospitals have four times as many beds as they had before the Revolution. In 1937 there were 396,000 urban hospital beds as compared with 89,200 in 1913.

The republics inhabited by the non-Russian nationalities present a particularly striking picture, for here, under tsarism, owing to the absence of adequate medical assistance among the population, all sorts of charlatans and witch doctors flourished.

Today there are over 3,000 hospital beds in the Turkmen Soviet Socialist Republic, whereas formerly there were only 200; in the Uzbek Soviet Socialist Republic the number of hospital beds has increased from 600 to 9,200, and so on.

Besides this quantitative increase, it is necessary to note the qualitative aspect of Soviet hospitals, which differ so greatly from the hospitals of the past. This qualitative difference consists in the specialization in Soviet hospitals, the existence of departments in all the principal branches of medicine (therapeutic, surgical, neurological, tuberculosis, children's contagious diseases, gynecological, obstetrical and sometimes ophthalmological departments), the technical facilities (X-ray and light treatment, hydro-electric baths, and in many large hospitals mud-bath treatment); and special hospital dietary as worked out by the Soviet scientist Professor Pevsner.

The hospitals have highly skilled staffs, besides which they can avail themselves of the consultative services of professors in any branch of medicine, even to the extent of summoning them from the large cities.

The Dzerzhinsky Textile Mill (*Trekhgornaya Manufaktura*) is one of the largest factories in Moscow. Before the Revolution this enterprise was the property of a certain manufacturer named Prokhorov. Even prior to Soviet rule this factory had something in the nature of a clinic attached to it—a few hospital beds, in the charge of one

doctor. Very few people could avail themselves of the services of this clinic, and even these could not depend on receiving skilled medical aid. Now the annual budget of the hospital attached to this mill amounts to about one million rubles. There are one hundred skilled physicians and professors at the service of the factory workers and the members of their families. Any patient is entitled to receive free medical advice from professors, including specialists of world fame. This hospital has a maternity ward, X-ray departments, a physiological-psychology department and a chemical and bacteriological laboratory. The dental department is located in the health centre in the factory itself.

Another example. In tsarist times there were only two small hospitals with three physicians in the large industrial centre Orekhovo-Zuevo. Today there are one thousand hospital beds there and fifty physicians.

A physician was a rare sight in the villages of tsarist Russia. Witch doctors and ignorant village midwives held full sway. The rural population could depend only on them for "medical" assistance. Today district medical centres have been established throughout the countryside. These medical centres have hospitals, clinics, first aid stations, obstetrical departments, collective farm maternity homes, child and maternity welfare centres, nurseries, departments for the treatment and prevention of tuberculosis, venereal diseases and malaria, etc. Many of these centres have Roentgen and physiotherapeutic apparatus and laboratories.

Large hospitals, dispensaries and polyclinics have been built in the central towns of the rural districts.

In 1937 there were 175,955 hospital beds in the countryside, whereas in 1913 there were only 49,423. Lying-in hospitals can now accommodate 54,317 women, as against 4,611 in the old days. There are 1,626 rural child and maternity welfare centres, whereas there was not a single one before the Revolution.

In 1937 there were 370,000 children in the regular nurseries of the countryside, and 3,500,000 in the seasonal nurseries.

Urban medical establishments are ever ready to come to the assistance of distant rural settlements in emergency cases by dispatching physicians in aeroplanes.

The Soviet Government takes every measure to strengthen the rural staffs of medical workers; rural physicians receive higher pay, all sorts of material advantages are afforded them, every three years they are sent for a three to four months' course of specialized study in some medical institute, during which time they continue to receive their full pay and an additional allowance.

Increasing numbers of people avail themselves of health resort treatments. In 1937 more than half a million people took sanatorium cures, exclusive of 200,000 clinic patients and the many thousands of people who visited the health resorts on their own and not through some medical establishment. Over two million people annually spend their vacations in rest homes.

In tsarist Russia health resorts could accommodate only about 3,000 visitors. Today sanatoria accommodate 80,000. In the old days, health resorts were only for the privileged rich, the big landowners, merchants, nobles, army officers, government officials and the higher ranks of the clergy. The working men had no access to such places. Today they are at the service of the working people and their families. Many of the country homes and palaces which formerly belonged to the royal family and the aristocracy have been turned into sanatoria, and large numbers of new ones which are virtual palaces have been constructed.

Besides the establishment of excellent new health resorts, vast improvements have been made in the old ones. The Sochi-Matsesta health resort can serve as a good example of the transformation from old to new. New first-class sanatoria have been opened here, a splendid new bath for balneological treatment has been built, and new sulphur springs have been discovered.

In addition to the famous health resorts of Crimea and the Caucasus which are known all over the world, numerous new health resorts have been established in

other parts of the Soviet Union. Every Union and Autonomous Republic has its local balneological and climatotherapeutic health resorts.

The constantly expanding and rapidly increasing scope of public health work in the U.S.S.R. demands ever larger numbers of workers in this field. The medical schools, where new physicians are trained, are state institutions. The Soviet Union now has 72 independent medical colleges with a student body of over 100,000. Tuition is free and most of the students receive state allowances. Every graduate of any institution of higher education in the Soviet Union knows beforehand where he will work. The People's Commissars of Public Health of the U.S.S.R. and the various Union Republics, or their assistants, arrange to talk things over with each young physician in order to be able to determine what work he is best suited for and where it would be best to assign him. Of course the personal interests of each individual are taken into account as well as the requirements of the state.

Of the physicians working in the Soviet Union today, over 80 per cent are new, having graduated from medical schools during the years of Soviet rule.

The physicians, scientific workers and professors are held in high esteem in the Soviet Union. A splendid expression of the respect accorded them is the fact that many medical men and scientists have been elected members of the Supreme Soviet of the U.S.S.R. and the Supreme Soviets of the Union and Autonomous Republics. Many medical workers have been decorated by the Soviet Government for distinguished service in the field of science and medical work.

In the U.S.S.R. medical science is closely bound up with practice. There are 9,600 scientific workers in the 297 Soviet scientific research institutes in the various branches of medicine. On the basis of a wealth of clinical data and extensive research work these workers are able to solve problems of the utmost importance in the field of medicine.

The work of the late Academician Pavlov and his

numerous followers, among whom are Academician Orbeli, Professor Razenkov and Academician Speransky, is known throughout the world.

Academician Burdenko's work in the field of neurosurgery has also gained world renown.

Splendid results have been achieved by various theoretical institutes, including the Brain Institute, which is headed by Professor Ossipov in Leningrad and Professor Sarkissov in Moscow. Outstanding among the numerous scientific experimental and theoretical institutes is the huge All-Union Gorky Institute of Experimental Medicine (known by its Russian initials VIEM). The tasks of this Institute are to engage in a thorough study of the human organism on the basis of contemporary theories and practice of medical science, to discover new methods of diagnosis, treatment and preventive medicine, based on the latest achievements in the fields of biology, chemistry and physics, and the designing of new equipment for laboratories and clinics. The research work of the Institute covers all the theoretical branches of medicine and the branches of other sciences that are of most importance to medicine. It also maintains its own clinics. At present a new building for the VIEM, which will cost about 89 million rubles, is in process of construction.

The Soviet state assigns enormous funds to the development of science. The Soviet public health system, basing its work on the great advances made by science, has achieved splendid results in improving the health of the people. It has been able to achieve this on the basis of the general economic and cultural progress made by the country and with the assistance of the masses of the working people. In 1937 the death rate in the U.S.S.R. was 40 per cent below the death rate in tsarist Russia in 1913, and in Moscow mortality decreased even more—to 50 per cent of the 1913 figure. Child mortality in the U.S.S.R. was cut by half. The birth rate in the Soviet Union is constantly rising—in 1937, for instance, it was 18 per cent higher than in 1936. The natural increase in the population in Moscow more than doubled—from 91

per every 1,000 inhabitants in 1913, to 20 per 1,000 in 1937; in Leningrad the natural increase in the population more than trebled—from 5.3 per 1,000 in 1913, to 18.6 per 1,000 in 1937.

## PUBLIC EDUCATION

*By O. Leonova*

MEMBER OF THE SUPREME SOVIET OF THE U.S.S.R. TEACHER  
OF MERIT

**I**N their novels and other writings the foremost Russian authors, such as Tolstoy, Chekhov and Gorky, have drawn memorable pictures of Russian village school teachers—modest, hard-working fighters for educating the people. They have made their lives, that were all too familiar with privation and persecution, an open book to the world.

Receiving a miserable pittance for his work, the village school teacher in tsarist Russia was constantly being hounded by the local police officer, the local member of the Black Hundreds, the kulak and the saloon-keeper. Regular school buildings were practically unknown in the countryside. The school was usually housed in an old shack on the outskirts of the village, and served children living within a radius of five or six miles. In the autumn the poorly clad, half-starved youngsters had to trudge to school over muddy roads, in the pouring rain, and in the winter they were exposed to the blizzards and frosts. But even these “lucky ones,” who at least had an opportunity of getting some schooling, were very few.

Seventy-three per cent of the population of tsarist Russia (exclusive of children under nine years of age) was illiterate.

Of every thousand inhabitants, less than fifty attended school. Children of school age constituted 22 per cent of the population, but only 4.7 per cent actually attended school.



In 1913 the budget of the tsarist ministry of public education was fixed at 136,700,000 rubles. This meant an average expenditure of 80 kopeks per head, while England and Belgium were spending 3 and 3.50 roubles per head, and the U.S.A. somewhat over 9 rubles.

It was only the rare individual who, at the price of tremendous privations, was able to acquire an education, people like Mikhail Lomonosov, the scientist; Taras Shevchenko, the Ukrainian poet, and the writer Maxim Gorky, who rose from the very depths of the people, and whose brilliant works enriched not only Russian but world culture as well.

During the World War matters with regard to public education became still worse. The economic collapse of the country and the mass impoverishment led to a great decline in the number of those attending schools. Schools were closed down in places and, of course, no new schools whatever were built.

In the first years of its existence, Soviet Russia was engaged in a hard-fought and bitter struggle against intervention and internal counter-revolution. However, even in those difficult times, the Soviet Government devoted a great deal of attention to the development of public education. A decree was issued assigning the best premises for the use of schools, kindergartens and nurseries. Children were transferred from the old, crowded schools to roomy, well-lit buildings. There was a great increase in the number attending schools.

Putting an end to national oppression, the October Revolution swept away all restrictions with regard to the rights of any nationality to education. Among others, such barriers as the percentage quota set by the tsarist government for Jewish children allowed to enter high schools and universities, and the prohibition of national schools in the Ukraine, in Georgia, Armenia, Azerbaijan, Byelorussia and Central Asia were also destroyed. All children in the Land of the Soviets were given the opportunity of studying in their native tongue.

The tremendous work of wiping out illiteracy among the

adult population was started on a nation-wide scale. In 1918 I worked as a teacher among both children and adults. I shall never forget how persistently people strove to acquire knowledge, and how great was their joy when, at the age of thirty or forty, they first learned to read and write.

At present, illiteracy has in the main been wiped out in the U.S.S.R. In twenty years of Soviet rule, 40 million adults were taught to read and write.

After the Civil War, the Soviet Government began to devote even greater attention to public education. The multi-national composition of the Soviet state presented a number of difficulties. Some of the nationalities of the U.S.S.R. had no written alphabet of their own, no schools and no teachers. It was necessary to start from the very beginning in the field of education.

Under tsarism there could be no thought of universal elementary education. The tsarist ministers considered that universal, compulsory elementary education could be introduced "no earlier than before the end of the twentieth century." The rapid economic development of our country, the cultural growth and increased material well-being of the population, the tremendous amount of work done by the Soviet Government in the field of culture made it possible to introduce universal compulsory elementary education throughout the country in 1931.

One can judge of the progress of public education in the U.S.S.R. both by the number of school children and students, and by the expenditure on public education and school construction.

In 1914 there were only 8,137,000 school children and students in tsarist Russia.

In 1938-9, the number of school children and students in the U.S.S.R. (including those engaged in all forms of education) reached 47,442,100.

In 1914 there were 995,000 children attending secondary schools.

By 1938-9 the secondary schools (both general and special) already had an attendance of 12,076,000.

In 1914 there were 112,000 students in universities and colleges, whereas by 1938-9 this number had increased to 601,000.

More schools were built in the U.S.S.R. in twenty years than the tsarist autocracy built in two hundred years. Thus, from 1933 to 1938, 20,607 schools were built.

Tuition in the Soviet Union is free.<sup>1</sup> The state further manifests its solicitude for the student body by providing the overwhelming majority of university students with stipends and living quarters.

Expenditure on public education is also increasing. In 1937 alone, 6,179 million rubles were allotted for school requirements.

The Third Five-Year Plan (1938-42) provides for the introduction of universal, compulsory secondary education in the cities, and for universal, compulsory education up to and including the seventh class in the countryside and in all the national republics, accompanied by a steady increase in the number of children going through ten grades of schooling.

The Plan provides for an increase in the number of students in universities and colleges from 601,000 in 1938-9 to 650,000 by the end of 1942.

By 1942 the number of children attending elementary and secondary schools in the cities and workers' settlements is planned to increase from 8,600,000 to 12,400,000; and in the countryside from 20,800,000 to 27,700,000. In all over 40 million children will be attending elementary and secondary schools by the end of the Third Five-Year Plan period.

It is also planned to train 550,000 to 600,000 additional teachers for the schools of the Soviet Union, during the period from 1938 to 1942. Hundreds and thousands of

<sup>1</sup> In 1940 payment for education was introduced for the three upper forms (ages 15, 16 and 17) in the secondary schools and in all higher education. The payments are small and constitute only 3-6 per cent of the total expenditure on education. Fees are remitted and grants given in the case of orphans or students from families earning low incomes who reach the required standard. It should be remembered that this is a purely temporary measure of the period of transition from Socialism to Communism.

new schools will be added to the thousands of modern school buildings that have already been built.

The tsarist government regarded the numerous national minorities of Russia as mere prey for colonial plunder. It had no interest whatever in their cultural development. On the contrary, tsarist officials planted and fostered ignorance and barbarism among the population in the national borderlands, inciting the various nationalities against one another.

The fact that only 25 kopeks a year were spent per head for public education in Uzbekistan, for example, and 50 kopeks in Turkmenistan is evidence of the absolutely insignificant expenditure of tsarist Russia on public education in Central Asia.

Today over 30 and 40 rubles per head are being expended annually on public education in the Uzbek and Turkmen Republics. Over 80 per cent of the population of these Republics are literate. In compliance with the law on compulsory education, all children in the national republics, as throughout the U.S.S.R., are attending elementary schools free of charge. At present there are over 20 times as many pupils attending secondary school in the national republics as there were in 1914. In some national republics the increase in the number of secondary school pupils has been even greater. In Azerbaijan there are 35 times as many children attending school now as before the Revolution, in Turkmenistan—37 times as many, in Uzbekistan—53 times as many, in Armenia—68 times as many, and in Kirghizia, where before the Revolution there were only 500 school children in all, 172 times as many. Tajikistan had no secondary schools at all before the Revolution; now there are 22,000 children attending the schools, established in this Republic by the Soviet Government.

The tsarist government put every difficulty in the way of the children of the urban and rural poor to keep them out of its institutions of higher learning. In the U.S.S.R. the doors of universities and colleges are wide open to all young men and women. Byelorussia, which did not have

a single university before the Revolution, now has 22, Azerbaijan has 13, Armenia—8, Uzbekistan—30, Turkmenistan—5, Kazakhstan—19, and Kirghizia—4. In Georgia, a land whose culture dates back for centuries, there was only one university before the Revolution, with 300 students attending; now it has 18 universities, in which 21,800 students are studying. In the Ukraine there were 15 universities before the Revolution; now there are 139.

The Soviet school teacher is a very important factor in the country's cultural development. There were comparatively few teachers in tsarist Russia. In 1911, for example, there were only 92,400 teachers. At present there are approximately 1,000,000 teachers in the U.S.S.R.

The fact that the people have elected 19 teachers Members of the Supreme Soviet of the U.S.S.R. shows how highly their work is valued. Scores of teachers have also been elected to the Supreme Soviets of Union and Autonomous Republics.

Together with his country, the Soviet school teacher has traversed a difficult but glorious path of labour and struggle. He fought in the front lines during the Civil War, and later took part in the struggle against economic collapse. Held in high esteem by the Soviet power, accorded every care and attention by the Soviet Government, the Communist Party and Comrade Stalin personally, the Soviet teacher has now risen to a position in which he takes an active part in administering the affairs of state in the land of Socialism.

The care manifested for children in the U.S.S.R. is not confined to their school years. From their very youngest days the children are the objects of an attention which ensures them the opportunity of growing up into worthy citizens of Socialist society. The working mother may work in the factory or office, and the collective farm mother in the field, with their minds at rest, knowing that their children are safe in nurseries under the supervision of experienced doctors and nurses.

In the kindergarten and the school the growing child is

provided with everything necessary for his physical and mental development.

In the U.S.S.R., the state and society as a whole holds the mother in great respect and accords her every attention and care. The birth of a child is welcomed in every family as a joyous event. The state shows its solicitude for the child even before its birth. Every part of the Soviet Union has its rest homes for expectant mothers, maternity and child health centres, dairy kitchens, nurseries and kindergartens.

Thanks to the solicitous care of the Soviet Government, the creative talent in children is being brought out with great success in our schools, children's homes and kindergartens. Soviet teaching methods not only help to reveal child talent, but assist in its development. Particular attention is devoted to gifted children. Special schools for young musicians, artists and dancers have been established in many cities.

As a result of all these measures taken by the Soviet Government, the country's cultural level has risen immeasurably. By January 1937 the forces of the Soviet intelligentsia increased to 9,591,000 persons. If we bear in mind that many of the skilled workers in the factories of the U.S.S.R. have had a secondary education, this figure will prove much higher. Including members of families the intelligentsia now comprises about 13 or 14 per cent of the population of the U.S.S.R.

The Soviet Government aims during the Third Five-Year Plan period (1938-42) to raise the cultural and technical level of the working class to the level of engineers and technicians. It is successfully carrying out the great Stalinist task of making all workers and all peasants' cultured and educated members of society.

## CRIME RECEDES

By A. Vyshinsky

ORDER OF LENIN. PROCURATOR OF THE U.S.S.R. DIRECTOR OF THE INSTITUTE OF LAW OF THE ACADEMY OF SCIENCES OF THE U.S.S.R. MEMBER OF THE SUPREME SOVIET OF THE U.S.S.R.

THE fight against crime represents a highly important and far-reaching problem which has engaged the minds of philosophers, jurists, statesmen and others active in political life.

Criminologists in their study of crime carefully analyse such statistical material as helps to ascertain the state of crime in general and of its various categories in particular. From these data they construct certain theories and endeavour to formulate special laws of the genesis and development of crime, as if its origin and dissemination could really be subject to special laws which differ from the general laws of development of human society.

The study of crime, including transgressions such as prostitution, procuring, keeping disorderly houses and suicide, as well as the phenomenon of drunkenness, has become the subject matter of a special science perversely called "moral" statistics, though these statistics deal with matters most immoral.

The "father" of moral statistics is A. Quetelet, a Belgian, who, in his *Man and the Development of His Faculties*, wrote:

"Society bears in its womb the embryo of every crime that will be perpetrated, because it is the vessel that contains the conditions which facilitate the development of crime; it paves the way for the crime, so to speak, while the criminal is merely the tool. Consequently, every state of society presupposes a certain number and kind of criminals as a necessary consequence of its organization. This observation, which at first blush might seem to be fraught with gloom, is, however, on closer examination, full of bright promise. For it points out the

possibility of improving mankind by changing its institutions, habits, education and everything else that influences its mode of existence."

Quetelet, like numerous other savants engaged in solving the problem of crime (Ferri, Adolph Prince) was unable to get to the bottom of the whole subject, i.e., to ascertain the real causes which engender crime; nor did he find effective means of eradicating these causes.

They pointed to no remedy that would result in such an improvement of "institutions, habits, education," etc., as would preclude the very inception of crime.

Philanthropists and penologists have vainly grappled with this problem which only the entire nation is competent to solve.

In petty, narrowly-conceived reforms confined to police and administrative measures they see the clue to the solution of this problem of paramount importance, yet no solution is possible without a radical change in social relations.

Unable and frequently also unwilling to discern the real causes of crime, criminologists and legislators focused their attention on the punishment to be meted out.

Punishment was the panacea, the patent medicine universally to be applied to prevent and root out crime.

But, alas, no prison system, however numerous and varied the scorpions used to chastise its victims, can possibly make any headway in the battle against crime unless it has been preceded by a radical change in the system of social relations, unless a social system is established which by virtue of its entire organization, of the very principles underlying this organization, is capable of removing the causes that give rise to crime.

A comparative analysis of crime in tsarist Russia and in the U.S.S.R. will be highly instructive.

Comparative statistics, which characterise the state of crime, and, what is more important, the trend of development of crime in any particular historical epoch, show clearly the decisive role played in this field by the country's



social and political system, by its economic and cultural conditions and by the general and special interests, ideas and principles prevailing in its society.

Despite the defects and even vices of the method they applied, the works of Mayer, Tarde, Berg, Tarnovsky and others who have investigated the subject confirm the premise that there is a very intimate connection between crime, on the one hand, and, on the other, the economic and political condition of a country; such factors as crops, famine, the price of bread, or war.

Mass poverty, the huge army of unemployed, the corruption of the privileged circles of society, and the speculative frenzy of shoe-string merchants and fly-by-night stockbrokers with the thousands upon thousands of criminal manipulations, forgeries and frauds to which they lead—these are the hotbeds that breed crime, responsibility for which must be laid at the door of the very system of social relations under which private property reigns supreme and innumerable vices and abuses are practised with impunity.

This is confirmed by the voluminous scientifically established data applying to pre-revolutionary Russia.

A study of these data discloses a general upward trend in various crimes and crime in general.

Thus, according to the official statistics of the tsarist Ministry of Justice, crime increased with every year in the thirty-three provinces of Russia proper, this growth being even in excess of the increase in population.

During the two decades of 1874 to 1894, there was a 55 per cent increase in the number of persons convicted of crimes against the person.

There was a particularly great increase in seduction and rape—150 per cent, while homicides increased almost 50 per cent.

Nor was there any change for the better thereafter. Between 1899 and 1908 grave offences within the jurisdiction of general courts almost doubled in number, the increase in arson, aggravated robbery, robbery and homicide being particularly great.

The last five years before the war (1909 to 1913) offer the same picture—a rise in the curve of criminal offences.

Crimes against property take a prominent place. Theft, fraud, embezzlement and forgery are constantly among the most numerous offences. Homicides show an enormous increase. The same is true of recidivism, which is also not accidental. In 1908, 18 per cent of all persons convicted by general courts were previous offenders. In 1909 they constituted 19.3 per cent; in 1910, 21.4 per cent; in 1911, 21.9 per cent; in 1912, 23 per cent.

Thus, general criminal statistics of Russia under the tsars show convincingly the tendency of crime to rise, a tendency which neither life sentences, exile nor capital punishment could bring to a halt. Saddest of all was the circumstance that juvenile delinquency was a major component of the grand total of crimes committed in tsarist Russia. In 1910 almost twice as many crimes were committed by minors between the ages of ten and seventeen as in 1901, the exact figures being 7,483 and 3,543, respectively.

Juvenile delinquency was fiercely but vainly combated with every available means of intimidation. Here tsarist Russia differed in no wise from other countries, such as France and Germany.

Neither the schools of criminal anthropology nor the schools of sociology gave a satisfactory reply to the question of what were the causes or what conditioned juvenile delinquency. They went no further than to offer such primitive explanations as the influence of heredity or elementary economic factors which themselves require explanation.

In the struggle against crime the prison with its terrible solitary confinement played the chief role under the tsar.

In fascist countries the old-type prisons have been replaced by concentration camps of the Dachau type and by so-called "modernized" prisons which have been made to conform to the fundamental principles of the fascist "penitentiary system." Freisler, a secretary in the German Ministry of Justice, formulated the principle governing

this system in the following terse and explicit language: "to make the punishment so drastic and deterrent that no one will ever want to taste prison life again."

Life however has proved his "theory" absolutely untenable. Prisons and concentration camps cannot be built fast enough to hold the swelling ranks of offenders, for the root of the evil lies deeply embedded in the social base of the modern capitalist state.

The Great October Socialist Revolution effected a radical change in social relations in the U.S.S.R. It was but natural that the question of crushing the resistance of the exploiting classes which had been overthrown, and of re-educating the masses of the people in the spirit of Socialism, should arise at the very beginning.

Criminal statistics for Soviet Russia after the October Socialist Revolution supply interesting proof of a recession in crime year after year.

Thus, from 1909 to 1913, the average number of criminal cases heard annually by Justices of the Peace was 1,302,525, the increase during this period having been 28 per cent. But statistics show that as early as 1920, the People's Court, whose jurisdiction has always been much larger than that of the former Justice of the Peace, had 1,248,862 criminal cases to try.

Beginning with 1922 the statistical data become more specific.

If we take the number of criminal cases handled by the Procurator's Office in 1922-3, when the first Soviet Criminal Code was published, as 100, we find a considerable drop in the index for the succeeding years. Thus in 1926 the index figure was 63, in 1929, 60.

1929 and 1930 are known in the history of the U.S.S.R. as the years in which the collectivization of agriculture, one of the most important and difficult tasks of the Socialist Revolution was, in the main, accomplished. The solution of this problem meant that tens of millions of peasants had been definitely won over to Socialism, that the peasantry had once and for all effected the change to the new, Socialist system of society. The achievement of

this task had far-reaching consequences, as it signified the end of the age-old struggle between the toiling masses of the countryside and the rich peasantry.

The collectivization of agriculture was a profound revolutionary transformation.

In May, 1930, 40-50 per cent of all peasant farms in the principal grain districts of the country had been collectivized. In that year the collective farms grew more than half of all the grain produced for the market. The collective-farm peasantry became a staunch, solid support of Soviet power. The victory of collective farming meant that no less than twenty million poor peasants were saved from poverty and ruin, from bondage to the rich peasants, the kulaks.

This victory of Socialism in the U.S.S.R. evoked a new frenzied outburst of malice and hatred on the part of the "have-beens," the kulaks and their ilk, who made every endeavour to destroy the collective farms. To this end they resorted to the theft of public, Socialist property, and to wrecking activities aimed at the destruction of the cattle of the peasants, particularly of the collective farmers.

As a result there was an increase during these years in several categories of crime, particularly in the stealing of public property. This occasioned the publication of the now well-known law of August 7, 1932, on safeguarding Socialist property.

The theft of public property is a particularly dangerous offence, as it tends to subvert the Soviet system which is based upon public property.

The law of August 7 is therefore a keystone in the system of revolutionary legislation, the observance of which is the chief concern of the Soviet Government and the Soviet people.

This law administered a crushing blow to the counter-revolutionary attempts of the kulaks, the rich peasants, to steal Socialist property.

Simultaneously, the strengthening of the collective-farm system and the increasing material welfare of the masses dealt a heavy blow to the kulaks and their

henchmen. They lost every vantage point that they had held, and this category of crime began to dwindle rapidly.

In the U.S.S.R. repression is not the decisive factor in combating crime. The mighty growth of Socialist construction, and the abolition of exploitation, unemployment and poverty create conditions that necessarily lead to a constant drop in crime. This becomes apparent if we examine for instance the number of prosecutions under the law of August 7, 1932. In 1936, convictions under that law were only 30 per cent of the 1935 total, while in 1937 the percentage dropped to 10.

The successes achieved in the U.S.S.R. under Socialism, the triumph of the collective-farm system in the countryside, the complete and irrevocable abolition of unemployment and the transformation of public Socialist property into the dominant economic force have had the effect of steadily lowering the crime index of the country.

In 1937, sentences for crimes against the state administration constituted only 48 per cent of the number of like sentences in 1933, for crimes committed in the discharge of official duties the ratio was 37.1 per cent, and 39.7 per cent for crimes against property.

Of great interest are the changes in the total of crime. Here we find a reduction of 52.1 per cent for the R.S.F.S.R. during the last quinquennial period (1933-7). For the whole U.S.S.R. there was a reduction of 28 per cent during the last triennial period (1935-7).

Statistical changes in juvenile delinquency deserve special note. If we take as 100 the number of convictions, in 1935, of juveniles from twelve to eighteen years of age inclusive, we obtain the following comparisons: 1936 (first half), 102.3; 1936 (second half), 83.6; 1937 (first half), 75.2.

The drop in crime is obvious and quite sharp. This is the verdict of statistics, showing that a cardinal change has taken place in the U.S.S.R. as a result of the historic victory of Socialism.

Another striking example of how things have changed with regard to crime in the U.S.S.R. is the frequency with which offenders appear voluntarily before the prosecuting

authorities—the Procurator's Office—and narrate their crimes, admitting their guilt and asking that they be helped to become honest workers. The Procurator's Office is always ready to assist in the placing of offenders who are determined to break with their criminal past. For instance, during twenty days in April, 1937, six hundred criminals voluntarily appeared in Moscow alone to make a clean breast of their offences. Although many had been previously convicted, jobs were found for 530 of them.

About 1,000 persons voluntarily came to confess their guilt to the Office of the Procurator of the U.S.S.R. Many of these voluntary admissions concerned offences that had not been known to the authorities, or the perpetrators of which had not yet been ascertained.

Again, many criminals write directly to the Procurator of the U.S.S.R., soliciting his aid to secure a new start in life.

Here is one such letter written by a certain Brevnov:

"My name is Brevnov. I am a former criminal with a long record of convictions, but earnestly request you now to grant me an appointment at your office to explain matters personally, I am very, very anxious to speak to you about many things and ask you not to refuse my request . . ."

A job was found for Brevnov. After some lapse of time he again wrote to the Procurator:

"I hasten to inform you that I am ever so grateful to you for the excellent treatment which I, a former thief, have received from you. . . . Now I see and am fully convinced that the Soviet Government knows how to reform people for good if only they want to lead a proper life. I advise all thieves and other law-breakers to walk straight and become honest workers and hope they will follow my advice. The Soviet Government has made it possible for me to become a motor mechanic."

The majority of those that were placed have kept their jobs and are working conscientiously. Many, like Brevnov, sent letters of thanks to the public authorities for the personal care and attention which they received at their hands. Many former criminals who in capitalist countries would be treated as outcasts, as the scum of society, are in the Soviet Union encouraged to take part in the economic development of the country and thus become in time active builders of Socialist society. Thus, the building of the White Sea-Baltic Canal and of the Moscow-Volga Canal was of vast educational value for hundreds of criminals employed on these projects. It changed their whole outlook on life and taught them how to earn their livelihood by honest toil.

The Soviet system of economy makes it possible for all to earn an honest living. Socialism, which establishes a new culture, re-educates people, changes their psychology, induces them to adopt a new attitude to the world that surrounds them, to other people, to society.

The right to work, which in the U.S.S.R. has become a matter of honour, glory, valour and heroism, is inscribed in the Soviet Constitution and is ensured by the whole might of the Soviet state as a fundamental right of Soviet citizens, as one of the greatest achievements of the Socialist Revolution.

The great Constitution of the U.S.S.R., which bears the name of Stalin, its initiator and author, embodies the victories of Socialism in the form of a legal enactment which guarantees to the millions of the Soviet people a maximum of prosperity and material well-being, the final disappearance of the "birthmarks" of the old world, the final vanquishing of the survivals of the old, of ancient vices and crimes.

The reason for the success of the struggle against crime in the U.S.S.R. is to be found in the very organization of the new, Socialist society, a society which rests upon a new economic basis and is protected from the ulcers and corruptions of the old world by a new Socialist culture, by Socialist democracy and Socialist law.

# PLANNING SCIENCE

*By A. Bach*

ORDER OF LENIN. MEMBER OF THE PRESIDIUM OF THE  
ACADEMY OF SCIENCES OF THE U.S.S.R. MEMBER OF THE  
SUPREME SOVIET OF THE U.S.S.R.

**I**N Socialist economy, which is based on the application of the latest technique, and makes use of the vast experience accumulated by man, science and scientists hold a high place. The Civil War and foreign intervention were still in progress when the young Soviet Republic, beset by enemies on all sides and in dire need of the bare necessities of life, established an extensive system of scientific research institutes, at the same time making every effort to improve the working and living conditions of those engaged in scientific work. Even in this early period Soviet scientists were widely enlisted in the work of drafting a plan for the development of the national economy, since only science could serve as the foundation of such an undertaking.

It was in 1919 and 1920 that, with the collaboration of two hundred scientists and engineers representing the most diverse departments of human knowledge, and on Lenin's and Stalin's initiative, the celebrated plan for the electrification of Russia was drawn up. This plan, which at first encountered many a sceptical jeer, was put into execution and completed much earlier than the time originally specified. The former Imperial Academy of Sciences was singled out for particular attention by the Soviet Government, although the majority of its members were at first far from sympathetic to the Socialist October Revolution.

The great Russian writer, Maxim Gorky, initiated the formation of a government committee to ease the life of men of science. In the most difficult years of the young Soviet Republic, this committee managed to have sanatoriums and rest homes set aside for scientific workers,



secured various allowances for them, and aided them in procuring foreign literature and apparatus for the pursuit of their scientific labours.

In 1925, when the Academy of Sciences of the U.S.S.R., as it was now styled, celebrated its bicentenary, the Soviet Government invited numerous foreign savants for the occasion. The whole tenor of the festivities held under government auspices was ample proof of the paramount importance attached by it to science as a factor in the building of Socialist society.

Science has made great strides in the U.S.S.R. during the twenty-one years of the latter's existence. Objective proof of this statement is the fact that in 1938 there were no less than 902 scientific research institutes in the country, with a total staff of 29,246 scientific workers. These figures are exclusive of factory and collective farm laboratories and their personnel, and of the observatories in the Arctic, which come under the jurisdiction of the Chief Northern Sea Route Administration. In January, 1938, the grand total of all scientific workers in the U.S.S.R. was eighty thousand.

The following table illustrates the expansion of the Academy of Sciences:

	1917	1938
Institutes of the Academy	1	58
Members of the Academy	45	130
Scientific workers	109	3,420
Appropriation (rubles)	1,500,000	127,000,000

In 1938, Soviet budgetary appropriations for scientific research work aggregated 1,016 million rubles.

As to higher education, statistics show that in all Russia before the Revolution there were only 91 universities and colleges, with a total enrolment of 112,000 students, primarily scions of the nobility, the landlords and the bourgeoisie, while today the corresponding figures are 716 and 601,000, with a student body consisting of the sons and daughters of workers, peasants and members of the intelligentsia.

These figures alone suffice to demonstrate the close tie between Soviet science and the people. But to these mere numbers of scientific workers and students, true sons of the people, is to be added the all-important fact that in the U.S.S.R. the achievements of science do not become a source of enrichment of only a small group of persons, to the detriment of the vast majority of the population, but accrue to the benefit of the whole community. This distinguishing feature of Soviet science has asserted itself from the very inception of Soviet power.

We have already made mention of the enlistment of men of science in the work of drawing up the country's electrification plan. The subsequent Five-Year Plans for the national-economic development of the U.S.S.R., which have acquired world renown, were also based strictly on scientific principals.

The execution of these plans required a considerable increase in the utilization of the country's natural resources. It is a well-known fact that in tsarist Russia, which possessed enormous mineral wealth, these natural resources were explored and surveyed only to a very small extent. In this field, as well as in the prospecting for, discovery and surveying of other raw material and primary power sources, Soviet science played an extremely important part. During the last twenty years Soviet scientists have penetrated into the most distant parts of the country and have multiplied the known natural resources of the country several times over. The more detailed study of this wealth proceeds parallel with its application in industry. Thus, for instance, in 1920, immediately after the forces of intervention were driven out of the northern regions of the Soviet Union, commenced the prospecting for the rich mineral deposits of the Khibini mountains and the detailed study of these minerals. Geological surveys and tests covered a period of several years. As early as 1929 big chemical plants designed to manufacture mineral fertilizers and other chemicals began to be constructed at the sites of the newly discovered deposits.

This clearly illustrates how closely science and industry are associated in the U.S.S.R. Under the tsar, science shied at any direct contact with the country's economic life, and therefore developed like a hothouse plant. In consequence, none of the great discoveries of Russian science found any practical application. In 1842, for instance, Prof. Zinin of Kazan, a celebrated chemist, worked out a method for the mass production of aniline on which the development of the aniline dye industry and the manufacture of aniline pharmaceutical products was based in other capitalist countries, while in Russia itself Zinin's discovery was not put to any practical use.

Under the Soviet Government such a state of affairs is impossible, for in the U.S.S.R. all scientific work is conducted in such a way that it is of direct benefit to Socialist construction.

The country's 902 scientific institutes are divided into two categories: governing and departmental.

The first category comprises the institutes of the Academy of Sciences, the best institutes of the several People's Commissariats engaged in theoretical research, and some of the institutes forming part of the big research centres under the Council of People's Commissars of the U.S.S.R., as, for instance the Lenin All-Union Academy of Agricultural Sciences and the Gorky Institute of Experimental Medicine.

The second category consists of the institutes attached to the various branches of industry and agriculture under the respective People's Commissariats.

The governing institutes engage primarily in the theoretical investigation of key problems which concern the national economy as a whole. These investigations shed light on the course of development of the productive forces of our country and make it possible to place production processes on a scientific basis, to govern these processes.

Scientific facts, established in this process, which it is deemed advisable to elaborate by technological research are sent on to the departmental institute engaged in the

specific line in question for further investigation under the supervision of or in constant consultation with the governing institute. If there is no corresponding departmental institute, the governing institute itself works out this particular question.

The prime function of the departmental institutes is to render scientific and technical service to the branches of industry and agriculture to which they are attached. These institutes are charged with finding laboratory solutions for problems that arise in the routine of factory production, to seek to improve the technological processes in use and to work out new processes. In cases where it is necessary to make a thorough theoretical investigation beyond the capacity of the departmental institute, it applies for assistance to the governing institute with which it is associated.

The functions of the departmental institutes also include the rendering of assistance to factory laboratories and the exercise of some measure of control over their work.

The factory laboratories exercise control over production from the angle of technique, and do the research work incidental to any specific scientific problem the factory must solve. These laboratories thus become a vital force in the work of their respective factories, and represent the primary research cells in the general system of scientific research.

In organizing the research work necessary for the building of Socialism, the Soviet Government applies the rule that scientific workers are to be given every encouragement to use their own initiative.

The annual plans, drawn up by the director and the scientific collaborators of each institute specify the theoretical and practical work to be performed by each research worker and stipulate the time allowed. These plans are preliminarily discussed at meetings of the various sectors concerned and at the Scientific Council, and are then taken up and acted on at a general meeting of the whole staff of the institute. However, it is the director who

is primarily responsible for the execution of the plan as finally adopted.

When the idea of planning science was first proposed, it was received with some misgivings. In doing research work you proceed from the known to the unknown, you seek and create what is new. Hence the question arose: how can discoveries as yet unknown, but contemplated for the future, be planned for a year ahead, with a fixed calendar prescribing execution?

The explanation lies in the fact that all research is a quest for the solution of definite problems by means of experimental operations. The annual plan specifies the series of operations which the investigator expects to yield the solution sought. The investigator does not undertake to obtain within a given time a complete solution of the problem he is dealing with; he undertakes merely to perform certain specified experimental operations in accordance with a definite time schedule. Of course, no experienced investigator has any difficulty in calculating the time required for these operations.

The question of planning science no longer causes perplexity. Many who feared that planning would jeopardise the creative faculty of scientists are now convinced that it is precisely due to planning that in the U.S.S.R. theoretical and practical research, including also scientific research, has reached a state of real florescence.

The plans worked out by the various institutes are submitted to the respective People's Commissariats, where they are co-ordinated on a national scale. This eliminates duplication of work, with the needless waste of energy and funds it would entail. After receiving the approval of the People's Commissariats, the plans are passed on to the State Planning Commission, where they are put in final shape; then they are submitted to the Council of People's Commissars of the U.S.S.R. for approval.

The present plans of the Soviet Union's scientific institutions, particularly those of the Academy of Sciences of the U.S.S.R., conform with the requirements of the

**Third Five-Year Plan** for the national-economic development of the U.S.S.R. (1938-42). This third quinquennial plan was recently under discussion in all its details and was approved at the Eighteenth Congress of the Communist Party of the Soviet Union (Bolsheviks) held in 1938.

This Congress laid it down as the fundamental task of the Soviet Union to overtake and surpass the advanced capitalist countries economically, i.e., in per capita production. The accomplishment of this task provides all scientific institutions of the country with work rich and vital in content. For this plan provides for a colossal increase of production in all branches of the national economy. This increase, however, can only be secured by further prospecting for and studying the country's mineral wealth, by distributing industry, agriculture and transportation highways in a manner that will yield the best economic results, by constructing still more factories and mills, by further improving the technological processes of production, etc. Hence, what is required here is concerted effort by economists, geologists, builders, technicians, and members of all other scientific professions to promote the common cause.

But it would be a mistake to think that, in setting itself practical aims, science in the U.S.S.R. neglects the solution of theoretical problems. Quite the contrary is true. Soviet scientists strive for a happy combination of theory and practice and for their interaction. Moreover, it often happens that the solution of practical problems must abide the solution of related theoretical problems. For example, the Soviet Union is now constructing on the Volga the most powerful hydro-electric power stations in the world, while in Moscow the world's tallest structure, the Palace of Soviets, is already being built. In operations of such gigantic proportions the approximate calculation, hitherto employed in constructional engineering must yield to new and more precise equations, which it is imperative to work out. Regarded in this light, higher mathematics, often considered an "abstract" science,

becomes supremely practical. Such examples could easily be multiplied.

Take, for instance, the study of the physical laws of the electron. The introduction of automatic and remote control in industry is largely dependent on theoretical investigation in this field. But there are also other theoretical themes engrossing the attention of Soviet science which do not yield direct practical results, and will not do so in the near future, such as the physics of the atomic nucleus.

On the other hand, scientists obtain a mass of valuable data from practical experience gained in factories, on construction projects, etc. This material is very valuable in making generalizations of profound importance. Thus, in the work of Soviet research institutes, questions of theory and practice are closely inter-related. This is another intrinsic feature of Soviet science.

The industrial expansion of the U.S.S.R. is attended by rapid progress in every field of knowledge and culture.

Archæology will serve to illustrate the point. In connection with the extensive building and reconstruction of new industrial plants and of entire cities, of hydro-electric power stations and canals, the institutes devoted to this science have been commissioned by the Soviet Government to make such archæological excavations as may be called for and to do so before the building operations are begun. For it is plain that after a construction project is completed, or even under way, its site should be closed to archæological research, particularly in the case of localities scheduled to be submerged beneath the waters of hydro-electric power reservoirs. Excavation, for archæological purposes, for which great sums are appropriated by the Soviet Government, was extensively carried on in the zone of construction of the Dnieper hydro-electric station, the Kuibyshev hydro-electric development, the White Sea-Baltic Canal, the Moscow-Volga Canal, and the Moscow subway, among many others. These excavations brought to light much valuable material descriptive of the remote past of the territory now covered by the

Soviet Union. Today more than two hundred finds of paleoliths have been listed within the confines of the U.S.S.R. while before the Revolution the number registered was not over twenty.

Soviet science devotes much attention to the elaboration of the humanities.

The general rise in the cultural level of the country has greatly contributed to the success achieved in this sphere, too. There is great popular interest in the work of the various special institutes engaged in the study of philosophy, history, ethnography and linguistics. All sections of the population eagerly follow their progress.

Soviet citizens study the history of their country with great attention and strive to comprehend fully the laws of social development. Large editions of works on philosophy or history are often sold out in one day. Such books are bought not only by students, teachers, and other brain workers but also by manual workers and collective farmers.

The Academy of Sciences of the U.S.S.R. has in preparation a number of publications of capital importance. These publications, each of which consists of many volumes, deal with general history, the history of the peoples of the U.S.S.R. and their ethnography, the history of world literature and of Russian literature, of philosophy, etc. These volumes, which will give the reader a general summary of the achievements of Soviet science during the last twenty years, meet the great demand for such works from every section of the Soviet people.

Close connection with the people, service to the people, and elaboration of purely scientific problems side by side with direct aid in accomplishing the tasks of Socialist construction—these are the characteristics of Soviet science, the features that account for its general popularity. The planning of scientific work in accordance with the general tasks that face the country is excellent training for those engaged in the various fields of science, and accustoms them to feel that they are a vital and active part of one integral whole.



The ties between Soviet scientists and the entire Soviet people were strengthened still more with the adoption of the new Soviet Constitution, the most democratic in the world. No one can ever forget the happy, festive atmosphere, impregnated, none the less, with the solemnity of the occasion, that marked the days of the election to the Supreme Soviet of the U.S.S.R. and of the Supreme Soviets of the respective Union Republics. As the people walked up to the ballot boxes to cast their votes, one could read in their radiant faces the pride they took in the performance of this important civic duty. The candidates of the Communist and non-Party bloc were elected everywhere, without distinction of sex or nationality, for they were the finest specimens of Soviet citizenship—the best of the workers, collective farmers and professional workers.

The sessions of the Supreme Soviet of the U.S.S.R. have demonstrated the close harmony existing among all the peoples of the great Land of Soviets, have given proof of their moral and political unity. This unity, this priceless asset, is the guarantee of the invincibility of the U.S.S.R. The men of science have made common cause with the masses, and this has injected a new content into their lives.

## THE SOVIET PRESS

*By Vera Golenkina*

EDITOR OF *UCHITELSKAYA GAZETA* (THE TEACHER'S JOURNAL)

THE U.S.S.R. enjoys freedom of the press. This right is guaranteed by Article 125 of the Constitution of the U.S.S.R. which states:

“... the citizens of the U.S.S.R. are guaranteed by law:

- (a) freedom of speech;
- (b) freedom of the press;

(c) freedom of assembly, including the holding of mass meetings;

(d) freedom of street processions and demonstrations.

"These civil rights are ensured by placing at the disposal of the working people and their organizations printing presses, stocks of paper, public buildings, the streets, communication facilities and other material requisites for the exercise of these rights."

And, indeed, in the U.S.S.R. printing shops, paper mills, huge halls in which to hold meetings and everything else needed to make free speech and a free press realities are wholly and completely at the disposal of the working people.

In 1913, that is on the eve of the World War, only 859 newspapers with a total circulation of 2,700,000 copies were published in what was then the Russian empire.

Most of the newspapers were owned by financiers and bankers, industrialists, manufacturers and big landowners. Policy was dictated to the biggest newspapers of pre-revolutionary Russia by the Russo-Asiatic Bank.

Since the Revolution the U.S.S.R., once a backward, illiterate country, has become a land of progress, literacy and culture, and has developed an extensive network of elementary, secondary and higher schools in which instruction is given in the respective native languages of its peoples.

Every department of the press has been broadly developed.

In comparison with the last pre-war year (1913), the number of newspapers published in the Soviet Union has grown tenfold (8,550 on January 1, 1939) while their circulation has increased fourteen times (47,520,000 copies). The total annual circulation of Soviet newspapers topped the 7,000 million mark in 1938.

The leading newspapers have exceptionally large circulations. *Pravda* (*The Truth*) has a circulation in excess of 2,000,000 copies; *Izvestia* (*The Gazette*), published under the auspices of the Soviets of Working People's Deputies of

the U.S.S.R., is printed in 1,660,000 copies and *Trud* (*Labour*)—the press organ of the Central Council of Trade Unions—in 480,000 copies.

Other newspapers of large circulation are the central trade organs of the various industries, published by the respective People's Commissariats jointly with the Central Committees of the corresponding trade unions. Prominent among these are *Industria* (*Industry*—the press organ of heavy industry), *Gudok* (*The Whistle*—the railway paper), *Uchitel'skaya Gazeta* (*The Teacher's Journal*), and the newspapers issued by the People's Commissariats and trade unions of Water Transport, Finance, Aviation, Light Industry, the Food Industry, Agriculture and the Timber Industry.

The Red Army and the Red Navy have many newspapers of their own. Besides the central papers, *Krassnaya Zvezda* (*The Red Star*) and *Voyenno-Morskoi Flot* (*The Navy*), there are numerous army, army corps, divisional and brigade papers, many of which originated in the days of the Civil War.

There are 3,993 local newspapers published in the various districts of the U.S.S.R. with a total circulation of 6 million copies.

The larger industrial establishments, institutions and state farms issue their own newspapers. These appear either every other day or once a week, and the circulation of many of them runs into tens of thousands. There were 4,604 such newspapers in the various factories, state farms and machine and tractor stations in 1937.

The smaller industrial establishments and institutions, and the collective farms, schools, factory shops and rest homes put out wall newspapers, (the articles being either written by hand or typewritten) which treat of the life of the establishment or institution and fight for improving production, raising the cultural level of the workers, etc. They indulge extensively in healthy criticism aimed at improving production. As the larger establishments also have a wall newspaper for every department, the total number is indeed enormous.

There are also many "travelling" newspapers, newspapers on wheels. During the spring sowing and autumn harvesting, miniature printshops mounted on trucks and equipped with radio receiving sets go out into the fields where the fight for high harvests is being waged. They are the "travelling" headquarters of some newspaper. News items about Stakhanovite records in the fields, about the results of Socialist competition among the tractor brigades and on the amount of work done by the harvester combines, as well as articles on the shortcomings of the work, written by the collective farmers themselves, are printed in the paper the very same day, together with the foreign and domestic news picked up on the radio.

The 1,880 periodicals published in the U.S.S.R. have a total annual circulation of 250 million copies.

The tremendous interest of the millions of Soviet working people in political questions and their eagerness to get a thorough political education has led to a colossal growth in the publication of the classics of Marxism-Leninism. In the period of 21 years from 1917 to 1938 a total of 395,400,000 copies of the works of Marx, Engels, Lenin and Stalin were published in the U.S.S.R.

The publication of literary works has increased more than sevenfold (15,900,000 copies in 1913 and 117,800,000 copies in 1937), of books on agriculture almost eightfold (3,000,000 and 23,200,000), books on social science and political works—seventeen times (17,700,000 and 308,600,000) and technical books—twenty-seven times (2,200,000 and 59,400,000).

The publication of the classics of literature has also increased by leaps and bounds. In the period from 1917 to 1938, 1,475,000 copies of Balzac's books were published (as compared with 100,000 copies published during the preceding twenty years), 969,000 copies of Heine's works, 3,378,000 of Victor Hugo's and 1,932,000 of Dickens'. The increase in the publication of the Russian classics has been even larger. Under Soviet rule Pushkin's works have been published in a total of 27,864,000 copies (as compared with 9,165,000 copies published from 1897 to 1916),

Chekhov's works in 14,370,000 copies, and Gorky's in 38,128,000 copies. The books of Saltykov-Shchedrin, the famous Russian satirist, have been published in 5,587,000 copies—which means 80 times as many as before the Revolution.

Equally noteworthy are the figures illustrating the increased publication of books for children. The total number of these published in 1913 was 6,550,000; by 1937 this figure had swelled to 66,396,000, that is, had increased tenfold. Special newspapers in the various native tongues are issued for children. The most popular children's newspaper—the *Pionerskaya Pravda* (*The Pioneer's Truth*)—has a circulation of 900,000.

Under Soviet rule the printed word has penetrated to the most remote parts of the vast territory of the U.S.S.R. Newspapers are being published in 70 languages, and books in 111 languages, of the peoples of the U.S.S.R., of whom 40 have developed written alphabets only since the October Revolution.

Newspapers, books and periodicals are so priced as to be within the means of every Soviet citizen.

It is the aim of the Soviet press that every issue should help to popularize advanced ideas, to encourage the public-spirited workers in all spheres of labour, science and culture, reveal any shortcomings there may be on one or another sector of construction of the new Socialist life, ridicule all bureaucracy and red tape and expose the spies and saboteurs sent into the U.S.S.R. by the fascist countries. In all its activities the Soviet press is guided by the aim of building classless society, in which labour productivity will reach such a high level as to make possible the realization of the principle: "From each according to his ability, to each according to his needs," that is, towards the achievement of Communist society, towards the realization of the dream of the finest minds of humanity.

The Soviet press maintains the closest contact with the masses. Besides their huge army of trained professional journalists, the 8,550 newspapers published in the

U.S.S.R. receive contributions from more than three million factory and village correspondents.

The factory and village correspondents are reporters of a special type, a specifically Soviet type. They are correspondents who voluntarily undertake to contribute articles to the press on the achievements or shortcomings of the industrial establishments or institutions in which they work, or the collective farms of which they are members. They initiate public discussions on various questions pertaining to Socialist construction, give publicity to good work and call attention to instances of poor work in the state or economic apparatus.

In any issue of any Soviet newspaper you can find articles and news items signed by workers, employees, teachers, collective farmers and other public-spirited citizens, criticizing some short-coming in this or that branch of economy or administration. Quite often you will run across a news item written by some geologist reporting the discovery of new mineral deposits, or an article by a factory engineer submitting a proposal for improving work or calling for the organization of a new branch of industry, or a letter from a botanist who has evolved a new variety of plant.

A constant stream of such letters, news items and articles written by workers, collective farmers and intellectuals pours into the thousands of Soviet newspaper offices daily and even hourly. *Pravda*, the organ of the Central Committee of the Communist Party of the Soviet Union (Bolsheviks), receives as many as 800 such letters in one day. *Uchitelskaya Gazeta*, the organ of the People's Commissariats of Education of the various republics and the teachers' trade union, receives from 4,500 to 5,000 letters a month from its readers. In the editorial offices every letter is given prompt and thoughtful attention. A great many of the letters are published, but lack of space makes it impossible to publish them all. However, measures are taken with regard to each letter—whether published or unpublished—to satisfy just grievances and eliminate irregularities. The Soviet authorities lead an

attentive ear to the voice of the press and quickly react to any warning signals it may sound.

One of the fundamental principles of the Soviet press is criticism, regardless of person. In other words, anyone, no matter what post he may hold, irrespective of his status, may be subjected to oral and printed criticism for any fault he may have committed. Criticism aids the Bolshevik Party and the Soviet Government to disclose mismanagement and inertness, and to correct all kinds of deficiencies as quickly as possible.

The citizens of the U.S.S.R. freely state in the press their opinions on any economic or political question. When necessary they demand an explanation from the head of the industry or the state apparatus in question. Thus, for example, the leading newspapers have published questions addressed by individual citizens to various People's Commissars, among them the People's Commissar of Foreign Affairs. And each of these inquiries received a full reply, also through the press.

The workers correspondents carry on a vigorous, persistent campaign against bureaucracy and against violators of Socialist labour discipline, wage-hogs, idlers and other disorganizers of production.

The Soviet press maintains various forms of contact with its readers. Apart from extensive correspondence, there are well-prepared meetings between groups of readers and newspaper staffs for the purpose of discussing problems and exchanging opinions. For example, the editors of *Machinostroyeniye* (*Machine-Building*—the official press organ of the People's Commissariats of the Machine Building Industries) arranged a meeting in January, 1938, with the engineers and Stakhanovite workers from the machine-building plants. Seven hundred of its readers discussed with the staff the experience gained by the Kuibyshev Plant in Kolomna—one of the largest machine-building works in the U.S.S.R.—in mastering the new technological processes. The readers suggested to the editorial board how best to continue the paper's drive for introducing and mastering these processes.

In preparation for the new school year of 1938-39 *Uchitelskaya Gazeta* held a conference with teacher members of the Supreme Soviet of the U.S.S.R. Among those present at the conference were teachers from the republics of non-Russian nationalities—Georgia, Armenia, Kazakhstan and others. The outstanding teachers here assembled advanced concrete proposals for improving public education. According to their general policy, the editors of the newspaper carefully noted these suggestions and advocated their adoption in its columns.

At the conclusion of the first term of school this newspaper, in order to ascertain how the schools and the various public educational bodies had functioned during that period, again invited a group of readers—this time village school teachers—to the editorial offices. This particular meeting between the editorial staff and the readers was attended by M. I. Kalinin, President of the Presidium of the Supreme Soviet of the U.S.S.R., who took an active part in its business.

The editors-in-chief of newspapers as well as the associate editors receive visitors daily and listen attentively to what they have to say. This practice extends the newspapers' contact with their readers. Each year from 17,000 to 18,000 visitors call at the editorial offices of *Pravda*. More than twelve thousand call at *Izvestia*.

It has become a tradition for all Soviet newspapers to hold readers' conferences at which the editors give an account of their work to their readers. Eight hundred readers took part in the readers' conferences held in 1938 by *Sotsialisticheskoye Zemledeliye* (*Socialist Agriculture*), the press organ of the People's Commissariat of Agriculture and of the trade unions of the agricultural workers and specialists of state farms and machine and tractor stations. The same year the editor of the Moscow regional and city newspaper *Moskovsky Bolshevik* (*The Moscow Bolshevik*), reported on the newspaper's work to 2,000 readers.

All these measures promote close contact between the newspapers and their readers; help the newspapers to



become true servants of the people and make it possible to raise issues promptly and effectively.

Soviet newspapers came into being when street fighting against the defenders of the old order was still going on. The Soviet press of that period roused the workers and peasants to fight against the republic's domestic and foreign enemies, propagated the slogans of the Soviet Government and scathingly denounced the deserters, self-seekers and profiteers.

With the conclusion of the Civil War, the Soviet newspapers dedicated their columns largely to other problems. Besides dealing with the questions concerning the political education of the masses, they focused attention on the economic and cultural development of the country.

In the U.S.S.R. the press must be a propagandist, an agitator and an organizer—that is how Lenin formulated its tasks. Here are a few examples illustrating this conception.

During the years devoted to carrying out the first two Five-Year plans, Stalin's slogans about mastering the new industrial plants and the new technique were particularly popular. The Soviet press eagerly took up these slogans. Correspondents from *Pravda*, *Izvestia* and *Industria*, working in groups at the large industrial enterprises, did valuable service in making these slogans effective.

The Soviet press also plays a prominent role in spreading the Stakhanov movement.

"I remember," writes Alexei Stakhanov, the famous coal miner who initiated this remarkable movement, "that seeing my record featured in the press spurred me on towards new achievements in the field of labour productivity. The press must be given credit for the efficient way in which it brought my experience to the knowledge of my fellow workers in other mines. As a result the Donetz coal fields, which used to give the country 140,000-150,000 tons of coal a day now produce more than 200,000 tons."

Newspapers have become indispensable in the daily life of the Soviet citizen. They appear everywhere—in the

Caucasian *aul*, the Uzbek *kishlak*, the mountain hamlets of the Pamirs and in the wintering places of the Arctic explorers on Novaya Zemlya. They are issued in factories and mills, in universities and colleges, in Red Army units, theatres, mines and submarines. Engineers and artists, actors and bakers, architects and deep sea divers, writers and sailors, aviators and printers, bank employees and coal miners all have their own regularly printed newspapers.

In the mountains and in the desert sands, in the zone of eternal frost and in the subtropics, the first thump of the labourer's shovel is answered like an echo by the click of a portable press, already busy putting out a newspaper for the inhabitants of cities-to-be while they are under construction.

The first issue of *Na Zashchitu Rodiny* (*In Defence of Our Country*), put out by the men of the Red Banner First Detached Army, appeared at Lake Hassan in 1938 in the days when the Japanese aggressors were sent staggering back across the border. Just before going into battle, the Red Army men published the *Ataka* (*Attack*), a special issue of their wall newspaper.

"The press," says Stalin, "is the only instrument whereby the Party can speak daily and hourly with the workers in its own language, in the language it needs."

And the Communist Party and the Soviet Government utilize this apparatus daily in the interests of the country and its citizens. It was through the press that the Soviet Government submitted the draft of the Constitution of the U.S.S.R.—the fundamental law of the state—to a nationwide discussion. The Government Constitutional Commission made a thorough study of all amendments to the draft suggested by the citizens of the Soviet Union and published in the press. Stalin, the chairman of the commission, carefully analysed these proposed amendments in his report at the All-Union Congress of Soviets. A number of them were accepted by the Congress and duly incorporated in the text of the Constitution of the U.S.S.R.

In 1937 and 1938 an enthusiastic campaign that stirred

the whole country ushered in the elections to the Supreme Soviet of the U.S.S.R. and the Supreme Soviets of the Union Republics. The Soviet press played no small role in campaigning for the candidates nominated by the Communist and non-Party bloc to the highest organs of state authority in the Land of Soviets. The papers were full of artless, straightforward stories sent in by ordinary Soviet citizens telling about the life and work of the candidates from first-hand knowledge.

One factory newspaper, *Udarnik Metallostroya* (*The Metal Construction Shock Brigader*) printed side by side an election campaign speech by Professor Mysh, a physician, then candidate for the Supreme Soviet of the U.S.S.R., and a letter from a certain Comrade Petrakova whose life he had once saved. Petrakova wrote that Professor Mysh "loved his fellow men, and loved and knew his work." And this was the best recommendation any candidate could wish for.

A Moscow factory paper, *Za Sovietskyy Podshipnik* (*Soviet Ball Bearings*), serving the Kaganovich Ball Bearing Plant, conducted an interesting and convincing campaign in support of Comrade Pichugina, formerly a worker of that plant, running for the Supreme Soviet of the U.S.S.R. In a few short years Comrade Pichugina, like so many others in the Soviet Union, had made much headway in life. Starting out as an unskilled worker on the plant's construction site, she had become a highly skilled mechanic. It was she who assembled the first Soviet ball bearings. She was also a prominent figure in public life, having been elected chairman of a district Soviet in the city of Moscow. In espousing the candidature of this true daughter of the people, the newspaper showed that the road traversed by Comrade Pichugina was typical of many gifted people who had formerly been brow-beaten and stifled by tsarism and had found application for their abilities only under the Soviet system. Workers, foremen and engineers, as also housewives who had had occasion to meet her in the course of her public work and collective farmers from her native village, contributed articles and

personal items about her to the factory newspapers. And every line they wrote was convincingly simple and true to life.

The draft of the Third Five-Year Plan for the development of the national economy of the U.S.S.R. was likewise widely discussed in the press.

Any useful new enterprise, whether in production, science or art, is promptly taken up by the press. Outstanding men in the field of production, the Stakhanovites, are frequently featured in its columns. Their methods of work are described in great detail for emulation by others.

It is customary for the Soviet press to give brief statistical summaries daily on the state of the current agricultural work (ploughing, sowing, reaping, etc.), on the day's output of coal, iron, steel and automobiles, and the figures for carloadings. These data are of absorbing interest to the Soviet reader, which is but natural, for steel and grain, coal and machinery, are the leading items that go to make up the national wealth which ensures the might of the U.S.S.R.

The Soviet press has grown to be a gigantic force which actively manifests itself in all spheres of economic construction and cultural development in the Land of Socialism. Some of the country's finest people, the ablest representatives of the Soviet intelligentsia, are engaged in newspaper or literary work.

All these people, as well as the professional journalists, enjoy the esteem of the Soviet reader. Many Soviet journalists conduct an extensive private correspondence with their readers. The masses know them, come to them with questions, seek their advice and assistance. There is thus the closest contact between writer and reader.

The Soviet Government and people put a high value on the work of the representatives of the press. Only recently, by order of the Presidium of the Supreme Soviet of the U.S.S.R., 172 Soviet writers were decorated with tokens of distinction, including the highest—the Order of Lenin and the Order of the Red Banner of Labour. A number of Soviet men of letters, Alexei Tolstoy,

Mikhail Sholokhov and others, have been elected to the Supreme Soviet of the U.S.S.R.

All this testifies to the important part which the Soviet press is playing in the life of the country and to the honourable position which pressmen hold among the working people of the Soviet Union.

## THE CINEMA

*By Professor S. Eisenstein*

### ORDER OF LENIN

WE say that the screen is of all arts the most popular in the Soviet Union not for the sole reason that it attracts millions of people to the picture theatres but because of the great public interest displayed during the actual production of films.

When the newspapers reported that my studio group was to start work on *Alexander Nevsky* thousands of people wrote to me with helpful suggestions and valuable historical data, besides recommending original sources. This was not an isolated case. Other men in the film world have had similar experiences, notably the Vassiliev brothers who made *Chapayev* and Michael Romm, the producer of *Lenin in October* and *Lenin in 1918*. Participants in the revolutionary events of 1917, old partisans, men who had served in the Civil War, sent their diaries, photographs and various documents relating to the first years of Soviet power. Many of these correspondents came to Moscow and talked things over with the producers, operators, actors and scenic designers—not a surprising thing considering the close ties that exist in the Soviet Union between the arts in general and the people.

Look through the huge mails that all Soviet producers, scenario writers and actors receive practically every day. Here are letters from places in sunny Georgia, the Arctic Circle, the shores of the Pacific, the table lands of the Pamirs, from all ends of the vast Soviet Union.

Famous film stars in the West also receive letters by the sackful. But they are mostly of an intimate character from smitten admirers. But the famous Soviet film star Luba Orlova receives other kinds of letters besides those appreciating her acting. For instance, when it became known that Orlova was to play the part of a mail-girl (Strelka) in the film *Volga Volga*, young mail carriers all over the country sent her letters of advice on how to play the part. At the present moment Orlova is studying the part of a mill-girl, and real-life mill-girls have been as quick to respond as their fellow film fans in the post offices were.

The screen enthusiasts' concern for the progress of the art is displayed not only in letters and articles in the press. However remote the place film people are always sure of a hearty reception. There is no lack of volunteers when mass scenes are to be filmed, though there are exceptions, as producer Arnstam could tell us. A year ago he was working on *Friends*, a film dedicated to the mutual amity of the Soviet peoples. The scene was laid in the Autonomous Republic of Kabardino-Balkaria. One of the episodes to be shot was the arrival of Soviet regulars in the district to assist the rebel mountaineers and the routing of the White Guards. The local people were delighted to take part in the filming of this episode. They came on horseback in regular squadrons. And bravely they played. But they were painfully embarrassed when the producer asked for men to play White Guards. The past was so hateful to them that no one was willing to put on the livery of the old regime. None were willing to assume the roles of men so hated by the people.

This was followed by another curious incident when the Red Army units went into attack. The non-participants in this scene, local collective farmers, who had so far been interested onlookers, immediately without waiting for any signal, charged irresistibly after the Red Cavalry with a mighty cheer to devastate the enemy.

Another case comes to mind, equally striking. It happened during the filming of *Lenin in October*—the scene

where the Red Guards and soldiers storm the Winter Palace. Fires had been lit for the participants, as the night was bitter cold, and an old watchman was engaged to keep them well ablaze. The signal was given, the Red Guards and soldiers charged at the double. Imagine the astonishment of the producer when he saw the old watchman running at the head.

The scene was spoiled. The producer asked the watchman what he meant by it. And the old man replied: "I couldn't help it. I took a hand when the Winter Palace was really captured."

Generally speaking our historical films are done on such a grand scale that large numbers of non-professionals are required for the mass scenes. In a number of cases the producer has regular Red Army troops placed at his disposal. The men and commanders are only too willing to participate in scenes resurrecting the glorious past of the Red Army, the exploits of the great soldiers who led the army of the people in the Civil War. In such cases the producer's task is an easy one, for the actors have merely to impersonate themselves, their older brothers, their fathers and comrades. There are other parts, however, that do not come naturally to Red Army men—then things are liable to go wrong.

In the film *Volchayevsk Days* the brothers Vassiliev attempted to reproduce an actual episode of the Civil War. The partisans had watered the slopes of a steep hill in mid-winter to make their position inaccessible to the Japanese invaders. The producers did the same, thinking that the icy slopes would baffle the Red Army men (dressed in Japanese uniforms) as they had the troops of the Mikado. However, when the men heard the word of command, not knowing what was in the minds of the producers, they set about the job in real earnest and reached the top. The scene had to be taken all over again.

I have already noted the great public interest displayed during the actual production of films. When a moving picture is released, the public gives its impartial and

discriminating opinion. Faults are severely criticized, achievements warmly encouraged, all in the friendly spirit of people who are interested in the progress of art and feel a moral responsibility for the quality of Soviet films.

Such is the organic union of the Soviet people with Soviet art and the servants of art who, in their turn, draw their inspiration from the masses.

The Soviet Government is a great patron of the arts and the people engaged in them, providing every opportunity for the development of individuality and artistic talent.

Much attention is paid to cinematography. During the Civil War great importance was attached to the development of the film industry in the young Soviet republic. That was the time when Lenin himself declared that the motion picture was the most important of the arts to the Soviet state.

Since then the Communist Party and Joseph Stalin personally have been constantly promoting the development and improvement of Soviet cinematography.

The motion picture has become a prime cultural necessity to the Soviet citizen. The best films are distributed in thousands of negatives and shown everywhere, not only in the big modern theatres in the cities and the cinemas in the countryside, but in clubs, the apartments of our Stakhanovites and other people of note. They are shown to collective farmers far out in the fields, to army and navy men and passengers on ships at sea.

Then there are the itinerant cinemas employing a great army of operators equipped with portable projectors. They show films in the most remote corners of the country, the Siberian forests, the alpine meadows of the Caucasus, the villages of Turkmenia and Tajikistan and the *auls* (native villages) of Kazakhstan.

To the far northern districts new pictures are delivered by air. The operators there take them on their itineraries by dog or reindeer team. In Yakutia, for instance, one operator recently made an interesting tour by dog-team.



In a few months he covered about fifteen hundred miles and showed his films in all the wintering camps on his route. But this, of course, is an exception.

Itinerant cinemas are generally installed in motor vehicles of the latest make. Among them are a fair number of the new outfits which show films out of doors in broad daylight.

Considerable attention was paid to the question of motion pictures as an important department of cultural development during the discussion on the new Five-Year Plan at the recent Eighteenth Congress of the Communist Party. Provisions were made for a sixfold increase in the number of sound picture installations by the end of the Third Five-Year Plan.

The immense popularity of the best screen actors and producers is shared by the heroes they create. If one were to speak of the fearless, light-hearted, brave young man of our age, boldly overcoming all difficulties, one would involuntarily remember the young Bolshevik, Maxim, of the screen trilogy *Maxim's Youth*, *Maxim Returns* and *The Viborg Side*. Maxim has become a household word.

To become heroes like the commanders Chapayev and Schors, to emulate the men of the past and present of our country, is the cherished ambition that the screen has kindled in the hearts of all our children.

I have been told that after the release of my film *Alexander Nevsky*, showing the struggle of the Russian people against the German invaders in the thirteenth century, notably the famous battle between the Russian cohorts and German knights fought on the ice of Lake Peipus, there was a run on paper clips in the stationers' stores. Children were buying boxes of paper clips by the dozen to make chain mail as worn by Alexander Nevsky. Every day, after school, young saviours of Russia armed with ply-wood shields and broom-stick lances would drive the Teuton invaders from their courtyards.

The most popular films are those which show Lenin and Stalin, the leaders of the masses. Such are the pictures *Lenin in October*, *Lenin in 1918* produced by Romm,

*The Great Dawn* produced by Chiaureli, *The Man with the Gun* produced by Yutkevich.

The Soviet picture-goer also admires the outstanding screen artists of the West. Charlie Chaplin, for instance, is enormously popular in this country. The films of this great star are shown with unfailing success in all parts of the country, and the recent celebration of his fiftieth birthday aroused warm public interest.

Twenty years ago, encircled by a ring of enemies, exhausted by blockade and famine, the Soviet country began to develop its motion picture industry. The first Soviet films were made in unheated studios by half-starved people, whose enthusiasm made up for the shortage of apparatus, film and other accessories.

Before the Revolution in Russia there were several private film studios very primitively equipped. They competed successfully with the foreign studios but it must be admitted that only a small number of the pictures released in those days had any artistic merit.

The motion picture as an art developed only after the Revolution. The first Soviet films were agitational films for the men at the front. Excellent news reels were made although the cameramen had only scraps of film with which to capture the unique events of those glorious days. These films are now treasured as invaluable documents showing the exploits of a people fighting for freedom and happiness.

Very often cameramen had to work under fire. They shared the rigours of life at the front and followed the troops into attack. One of these cameramen was the now famous Tisseh. Another was the equally famous Yermolov, who later took part in the production of the screen trilogy showing the life of our great Russian writer, Maxim Gorky.

The motion picture has kept pace with the general development of our country in culture.

The Five-Year Plans created a substantial technical base for the industry. The Soviet Union now produces its own film in large quantities. Several large plants have

been built for the equipment of moving picture theatres and studios.

Fine studios have been built in Moscow, Kiev, Minsk, Tbilisi, Leningrad and elsewhere. The Soviet newsreel service has branches in all the main cities.

Under Soviet rule the non-Russian republics too have developed film industries for the first time. The picture-goers of the Ukraine, Georgia, Byelorussia, Armenia, Azerbaijan, Turkmenia, Uzbekistan, and Tajikistan see films with the dialogue in their own languages. These films are made by their own nationals.

A special studio in Moscow is producing children's films, which are shown at special picture theatres and have considerable educational value. Children waiting in the foyers have all kinds of toys to play with and special attendants to entertain them with talks or games. These theatres work under the supervision of educational experts. Children who appear on the screen (for instance, the schoolboy Lyarsky, who played the part of the young Maxim Gorky in the films *Gorky's Childhood* and *Among Men*) do not become child prodigies; they must continue their studies, attending the usual schools, and they are not allowed to take part in any film production unless they have excellent marks at school.

The cameraman penetrates all spheres of life in the Soviet Union, on land and sea, in the air and under the water, recording life and society in the first Socialist state of workers and peasants in the world.

You will see the cameraman at sessions of the Soviet Parliament—the Supreme Soviet of the U.S.S.R.; you are bound to see the cameraman when new industrial giants are being inaugurated, such as the Dnieper Hydroelectric Power Station or the Magnitogorsk Steel Mills. Nothing new escapes the all-seeing eye of the camera. High tribute is due to the crew of the cameraman who filmed the construction of the great hydroelectric power station on the Dnieper. They lived there all the time from the first to the last day, recording the day's work of the builders with its effort and heroism.

In the same way the cameramen followed the construction of the Moscow-Volga Canal and other big Soviet developments.

Not long ago a newsreel man was one of the crew during a flight into the stratosphere. The serial shots were done brilliantly. The operator photographed the start, several episodes in the flight, the parachute jumps and the landing of the balloon.

A diving bell is lowered to the bed of the sea. Inside it is a cameraman taking shots of the mysterious depths. Nearby is another cameraman wearing a diving costume. His apparatus is enclosed in a watertight metal box.

Cameramen accompany the heroes of our country on the most arduous expeditions, climbing with them mountain peaks where foot never trod; landing with them on the roof of the world.

The heroes of the famous drifting expedition from the North Pole to the coast of Greenland took a movie camera with them and made good use of it as they were borne along by the ocean currents whose course they were the first to trace on any map. The icefloe ended its drift not far from the shores of Greenland. Before the scientists were taken off the ice they were visited by the Polar flier Vlassov. When the aeroplane landed on the ice near the camp the first man Vlassov saw was Papanin himself taking a picture of the arrival of the guest from the mainland.

Producers, operators, scenario writers and studio artists are trained at the State Institute of Cinematography in Moscow. This Institute has specially equipped laboratories, demonstration halls, studios and a collection of practically all the films that have appeared on the screen anywhere. The influx of students is so great that a new extension is being made, equipped with the most up-to-date motion picture technique.

The doors of the Institute of Cinematography are wide open to talented youth. As in all colleges in the Soviet Union the Institute's training is free of charge and the students receive a regular allowance from the state.

After graduating from this institute they go to the studios where, after a trial period, they are given work to do on their own responsibility.

Motion picture technicians are trained at another institute in Leningrad. A third institute, in Moscow, conducts research on the problems of stereoscopic films and the improvement of cameras, projectors, and film.

It is curious how art and real life have their coincidences. A few years ago, in that remarkable film *Deputy of the Baltic*, the actor Cherkassov played the part of the professor who was elected to the Petrograd Soviet by the sailors of the Baltic Fleet in the early days of the Revolution. And not long ago, in 1938, this talented representative of the Soviet intelligentsia, Cherkassov, was himself elected from a Leningrad constituency to the Supreme Soviet of the Russian Soviet Federative Socialist Republic.

Cherkassov is no exception. There are quite a number of movie people among our statesmen. For instance, the fine producer Chiaureli was elected by the working people of Georgia to the Soviet parliament, the Supreme Soviet of the U.S.S.R.

About two hundred people in the film industry have been given the highest award—an Order of the U.S.S.R. The producers Dovzhenko, Pudovkin, Kozyntsev, Trauberg, Chiaureli, Alexandrov and others wear Orders as distinguished citizens of the Soviet Union. The famous screen actress Orlova has been decorated by the Government with the Order of Lenin and the Order of the Red Banner of Labour.

The celebrities of Soviet screenland, even its doyens, are young in years. Their average age is probably below forty. The producers of the Maxim trilogy, Kozyntsev and Trauberg, began their career when they were hardly out of their 'teens. The producer Trauberg produced *The Blue Express*, shown all over the world, when he was only twenty-four. This is because our young scenario writers, actors and producers easily receive opportunities to display and develop their talents. The careers of Soviet

film people depend only on their capability, their ability to create first-class works of art.

The range of themes and genres that Soviet cinematograph industry is working on now is extraordinarily wide. Epics and eccentric comedies, dramas and fables, adventure films and pictures for children, animated cartoons and puppet films, the combination of the animated cartoon with living actors, etc. The film studios of the Soviet Union are making films on the Stakhanov movement, Socialist construction and the mutual friendship of the peoples. Classical literature too is being put on the screen.

Not to rest content with present achievements is a motto film workers share with all other people in the Soviet Union. They are constantly striving for improvements, continuing the search for new methods of cinematic expression, ever mindful of the three essential elements of Soviet art: realism, psychological insight, ideological significance.

The virtue and significance of Soviet cinematography is that it gives a true portrayal of life in our Soviet country and has really become, of all arts, the closest to the masses; that it is actively contributing to the further consolidation of our new system of society; that it has a great formative influence on the minds of the Soviet people. To this is due its immense popularity among the peoples of the U.S.S.R., their high opinion and encouragement of the art.

## THE THEATRE

*By I. Moskvín*

ORDER OF LENIN, PEOPLE'S ARTIST OF THE U.S.S.R. MEMBER  
OF THE SUPREME SOVIET OF THE U.S.S.R.

**S**EVEN hundred and ninety theatres. . . . Imagine for a moment that you are looking at a large map of the Union of Soviet Socialist Republics. What a forest of red

it would make if a flag marked every spot where there is a theatre. How it would blaze with light if they were represented by seven hundred and ninety electric bulbs. . . .

Look at the extreme right of the map. The flag you see there marks a theatre in the city of Vladivostok, one of the farthest east in the Soviet Union. When the theatre-goers are pouring through the exits of this theatre, the first bell is only just warning the public to take their seats in the theatre at Sverdlovsk (in the Urals), while at Minsk (right on the western frontier of the U.S.S.R.) the afternoon rehearsals have only just ended and the stage hands are setting the scenery for the first act.

Now look higher still to the Arctic Circle and beyond it. This flag marks the theatre at Igarka, the most northerly shrine of Melpomene not only in our country but perhaps in the whole world. When people here go to the theatre they carefully wrap themselves up in bearskins, while in the south, say to the recently opened Kurd theatre, the first to give performances in the Kurdish tongue, people go in the coolest of light summer costumes.

Every evening, as soon as the sun sinks behind the horizon, hundreds of thousands of people fill our theatres. Hundreds of thousands literally, not hyperbolically. In 1937 our theatres were visited by over 60 million people and in 1938 this figure was undoubtedly exceeded.

It would be interesting to have a day's stock-taking of the theatrical performances given throughout the country on any ordinary date. We would have a list of great length showing us the theatre in all its variety of moods, from the philosophical soliloquy of *Hamlet*, the passionate songs of *Carmen*, and the rollicking choruses of Offenbach's operettas to the measured dialogue of Russian merchants in the classics of Ostrovsky and the fiery eloquence of the partisan Vêrshinin in *Armoured Train* by Ysevolod Ivanov, a contemporary Soviet writer.

Nor is the Soviet theatre to be associated strictly with the Russian language or even the eleven languages of our eleven Union Republics. More than forty languages are spoken on the Soviet stage. The fact that it is multi-

national is one of the outstanding characteristics of the Soviet theatre.

There was a time when we compared our progress and our achievements with the statistics for 1913 and complimented ourselves that our country had recovered from two long wars, and was reaching the pre-war level and exceeding it. Now there is no point in such comparisons—and not only because the Soviet Union has long ago left 1913 behind but because there is often nothing to compare with. Indeed, how can we state in percentages the growth of the Soviet aircraft industry, or, say, the automobile industry in comparison with pre-war if Russia had not a single home-produced automobile in 1913?

This is the case not only with industry but with most branches of culture—particularly the development of theatres among the non-Russian nationalities.

At the present time there are twenty-four theatres in the Armenian Republic, twenty-one in the Tajik Republic, fifteen in the Kirghiz Republic and nine in the Turkmen Republic. How can we express the increase in percentages if in 1913 there was not a single theatre on the present territory of any of these four national republics?

Percentages are generally used to express comparisons in the terse language of figures. But would it not be briefer and simpler to say that in 1913 on the territory of the present Georgian Republic there were three theatres, while in 1938 there were 39, than if I tried to express the ratio between these figures in the language of percentages—1,300 per cent! In the Byelorussian Republic in 1938 there were 15 theatres (in 1913—2) in the Azerbaijan Republic—18 (in 1913—2), in the Kazakh Republic—34 (in 1913—2), in the Ukrainian Republic—100 (in 1913—35), and so with our other republics.

Anyone wishing to see proof of the remarkable variety and high standard of the theatrical art of the peoples of the U.S.S.R. has only to see the festivals of national art held yearly in Moscow. This has become a fine tradition. Every spring Moscow is visited by the actors, singers, musicians, dancers of some national republic who introduce the



capital to their remarkable art. We have already had festivals of the Georgian, Ukrainian, Kazakh, Uzbek and Azerbaijan theatres. Those who attended these festivals came away with indelible impressions of the wistful Ukrainian songs, the temperamental Georgian dances, the amazing Azerbaijanian melodies, the inimitable pageantry of the Uzbek theatre and the excellence of the Kazakh performances.

The theatre in the Soviet Union has been brought within the reach of the broadest masses. Sections of the population who formerly had no opportunity of going to the theatre are becoming enthusiastic theatre-goers. Much of this is due to the large number of collective-farm and state-farm theatres performing in rural districts. The first of them originated some five years ago and now their number is nearing three hundred. More than ten thousand actors are playing in these small theatres. In summer and winter, in heat and frost, by train and steam boat, by horse and dog team, they tour the country, going from village to village, from collective farm to collective farm. To the collective farmer the actor has become just as necessary and desirable a member of the rural intelligentsia as the teacher, the doctor and the agronomist. These touring theatres have an extremely varied repertory of modern and classical plays. In one of the Kirghiz touring theatres, for example, performances have been given of Lope de Vega's *Fuente Ovejuna*, and *La Locandiera* by Goldoni. An Uzbek touring theatre has given performance of Gorky's *Vassa Zheleznova*, Molière's *Médecin malgré lui*, and Gogol's *Wedding*.

The young folk have been given theatres of their own.

The first theatre exclusively for children was opened in Moscow on November 7, 1918, on the occasion of the first anniversary of the Revolution. Now there are 131 children's theatres in our country, about half of them puppet theatres. Children's theatres play a great part in the education of the rising generation.

There is hardly a town or hamlet in our country where you will not see a playbill of some kind. There is no corner

of our country, however remote, left unvisited by our provincial theatrical companies.

Last year a survey was made of the repertory of 53 provincial theatres. The results were extremely interesting. These theatres are performing 72 productions of Ostrovsky, 50 of Gorky, 34 of Shakespeare (*Othello* alone being performed at 13 theatres), 17 of Lope da Vega, and 15 of Schiller, to mention only a few authors.

Great changes are taking place on the provincial stage. In the past actors used to join a different company every season. These perpetual transfers prevented the development of good companies working in unity, that ensemble without which, according to Belinsky, the great Russian critic, "there can be no scenic art but at best only an aspiration towards it." Favourable conditions have now been created for the formation of permanent theatrical companies in the provinces and the wholesome effects have not been long in showing themselves and will undoubtedly be even more strongly felt in the near future. These theatres are not only growing in number but are steadily perfecting themselves artistically.

Foreign playgoers who have been to the theatre festivals in Moscow and Leningrad or have attended performances of the Soviet theatre abroad (The Art Theatre, The Kamerny Theatre, The Jewish Theatre) have seen for themselves that every Soviet theatre has its own character, its own manner, its own autograph, one might say. At the same time all our theatres have something in common that entitles the Soviet theatre to claim unity of style, a single historical trend, characteristic of all branches of Soviet art.

We generally define this style by the term Socialist realism.

The prime maxim of Socialist realism is that art shall be true to life. But this does not mean that Soviet actors are to look at life with the eye of a photographer. We learn to see life in its movement, in its development, in its endless variety.

In the U.S.S.R. new human relations are developing on

the basis of a totally new, Socialist attitude towards labour, property and the home country. It is the mission of art to reflect this new outlook. Its fulfilment requires a deep insight into human psychology, emotional power and monumental form. These general traits of Soviet art do not signify that artists and art are reduced to a uniform level. On the contrary, one of the underlying principles of Socialist realism is the full development of creative individuality.

The Soviet theatre is a theatre of the people. It serves the people and is inseparable from them.

In the U.S.S.R. we are witnessing a mass interest in all branches of art, one of the most remarkable examples of which is to be found in our amateur art. All branches of art: music, painting, sculpture, the stage, are being studied by hundreds of thousands of people, who, at the end of their working day, hurry off to their clubs to attend classes in theatricals, music and fine art where they are trained and advised by experienced teachers, professors and outstanding artists. Musical instruments, colours and costume, etc., are supplied at the expense of the trade union or factory to which the class or club is attached.

A few figures will give some idea how widely this movement has developed.

In 1914, that is three years before the Socialist Revolution, there were only 222 clubs in Russia. These were clubs for the nobility, the merchants and tsarist officers. Today the U.S.S.R. has some 95,600 clubs, of which more than 56,000 are in the countryside. There are about 60,000 different amateur circles (dramatic, operatic, choral, orchestral, dancing) with a membership running into hundreds of thousands, functioning under the auspices of the clubs and the numerous recreation centres of the factories, mines and institutions.

The collective farm countryside is not one whit behind the towns. In the collective farms (according to statistics taken in 700 districts) there are 21,672 theatrical circles attended by 326,343 people.

Many prominent actors, many artists who have received

the highest distinction from the government, are taking a personal interest in particular clubs and amateur theatres.

For instance, the author of this booklet together with Kedrin, an Artist of Merit, are coaching an amateur dramatic circle at the Stalin Automobile Works in Moscow.

People's Artist of the R.S.F.S.R. Meyerhold is coaching the dramatic circle which has been organized at the Krasny Proletary Works. People's Artist of Merit of the R.S.F.S.R. Khanayev is coaching a large circle organized by the Financing and Banking Employees' Union. Examples of this co-operation between the professional theatres and amateur theatricals are innumerable.

Many houses of culture and clubs in the U.S.S.R. are visited not only by leading professional companies but are often entertained by local amateurs. At one club in Moscow, attached to the "Caoutchou" Rubber Works, amateur performers have presented *The Taming of the Shrew*, while at the Tobacco Workers' Club in Leningrad similarly *Twelfth Night* is being played. Schiller's *Kabale und Liebe* has been played with success at the Building Workers' Club in Zaporozhye, a town in the Ukraine. These amateur societies have brought many talents to the fore. Amateur art is an inexhaustible source of talent to the theatre and the link between professional art and folk art. Many famous Soviet actors began their careers on the amateur stage. Artist of Merit Chirkov, who acts at the Young Playgoers Theatre in Leningrad and is well known to film fans in the title role of the film trilogy: *Maxim's Youth*, *Maxim's Return*, *The Vyborg Side*, came from an amateur dramatic circle in the small town of Nolinsk. "I owe much of my success to amateur theatricals which started me on my career as an actor," says Chirkov.

Neleppa, the famous Leningrad opera star, was discovered in an amateur chorus organized at a topography school.

It was in a Jewish dramatic circle that the present Artist of Merit Zuskin began his career. Kruglikova, not long ago a collective farm girl, now at the Bolshoi Theatre, has

the leading part (Lushka) in the new Soviet opera *The Soil Upturned*, adapted from Sholokhov's book. I could cite many more examples of this kind.

In the U.S.S.R. there is also a widely organised system of training professionals. Before the Revolution in Russia there were only three theatrical schools: one in St. Petersburg and two in Moscow. Their total attendance was not more than two or three score. Now, there are two theatrical institutes (at Moscow and Kiev) and forty-four theatrical schools with a total of 4,000 students. Training is free of charge, all the students are given an allowance and the free use of living accommodation, reading rooms, libraries, theatrical museums and the opportunity to visit the best theatres free of charge.

We Soviet actors want our art to help the people to know life and improve it, and we realize that to this end we ourselves must understand the laws of historical development and be clear in our social ideals. Like all Soviet art, the Soviet theatre is imbued with social spirit and principle.

Stalin once said that writers are the engineers of human souls. This striking definition applies to all artists. To be engineers of human souls is an honourable and important duty and we actors of the Soviet theatre are trying to perform it honourably. We have our reward in the people's regard and esteem, the attention and care which we could not have dreamed of before the Revolution. Acting was an unenviable profession in the old days. The actors in the state theatres were under the thumb of officialdom. Those in private theatres were under the tyranny of the entrepreneurs. Actors were regarded as an inferior sect and humiliated at every turn. The majority of them led a miserable life, wandering from city to city looking for work and patronage. Actors of great talent had to bury their ideals and minister to the tastes of their paymasters. How much budding talent perished in tsarist Russia without coming to fruition!

Actors in the Soviet Union have been given such conditions that work has become a pleasure. The actor's pro-

fession is respected; actors feel that they are truly citizens of their country. The best theatres have been awarded Orders by the government. On its fortieth anniversary, November 26, 1938, the Moscow Art Theatre with which I have been associated since the day of its foundation was awarded a second Order by the government. Hundreds of outstanding artists have been awarded Orders and titles of honour. But I think the best proof of the confidence and respect we enjoy among the people is the fact that a number of actors have been elected to the highest legislative bodies. The author, for example, is a member of the Supreme Soviet of the U.S.S.R.

The Revolution has opened new pathways to us actors, broad horizons. . . . That is why, in spite of all that we have achieved, we are still aspiring higher and higher, for we shall always be in debt to the people for their good opinion and the honours they bestowed on us.

In a short article like this it has of course been impossible to give a comprehensive review of the Soviet theatre or dwell on outstanding theatrical companies and individual actors. All I have attempted is to give the most prominent features of one of the most significant developments in world culture—the Soviet theatre.

## FOLK ARTS AND CRAFTS

*By Professor A. V. Bakushinsky*

THE folk arts, in their original and earlier period, expressed the joy of creation and the healthy and profound optimism of the people. Their primary purpose was to satisfy the people's needs and requirements. This is true of the carving of the Russian *izba* (peasant's hut) and ornamentation of the Ukrainian *khata*, and the woven carpets and rugs that decorate the *yurtas* of the Kirkhiz and Turkmen nomads. The folk arts and handicrafts of the Soviet peoples include the multicoloured homespuns of the North and Nizhni-Novgorod and the picturesque

national costumes of the Russians, Ukrainians, Byelorussians, Mordvins, Maris, the Crimean and Kazan Tatars, and the nomadic and hunting tribes; they include folk jewellery, carved ivory, gold and coloured brocade, delicate lacework and embroidery and woven fabrics of noble hue and design.

But the folk arts declined under the influence of capitalist culture and were ousted by its cheap and vulgar shoddy, its stereotyped production and machine standardization.

Prior to the October Socialist Revolution, the folk artists and handicraftsmen in Russia were obliged to work, not for the people, but for the capitalist market, for an indifferent consumer with debased and often perverted tastes. Ruthless exploitation had almost transformed the craftsman into a slave, and had depressed not only his living standard but also his artistic standard. Folk art was pressed into the production of drawing-room knick-knacks. Folk traditions retreated before the chance tastes of fashionable artists and the caprices of fickle modes. The folk artist lost his independence as a creative worker and was transformed into an artizan, a slavish copier of the specimens of bad taste sent him for execution.

The victory of Socialism in the U.S.S.R. created the conditions for a revival of the folk arts and handicrafts by emancipating peasant life both socially and economically and organizing its productive forces on collective lines. A widespread system of co-operative handicraft societies was created which took upon itself the duty of fostering and encouraging the folk arts. The craftsmen united to form artels (co-operative producing groups). Their output is now increasing with unusual rapidity from year to year. Profound interest is shown in the cultural and professional needs of the craftsmen, and especially in their artistic development and the revival of the basic features of folk art. The purpose is not only to revive and preserve the finest traditions and technique of the crafts but to raise them to a higher artistic plane. A diversified system of training young craftsmen has been devised, from

apprenticeship in the workshops of the artels to craft schools and industrial art colleges.

Quite an important part is also being played in the development of folk art by institutes that have sprung up since the Revolution, like the Industrial Art Institute in Moscow and the Experimental Craft Workshops in Kiev, which made a study of the handicraft industries in various parts of the country, offer instruction and advice, and enlist craftsmen for experimental work. Development is also considerably stimulated by the organization of socialist emulation and of contests between groups and districts.

Prizes and diplomas are offered for outstanding work, and distinguished craftsmen may earn the official titles of Master of Folk Art and Artist of Merit. The best of them are ranked with acknowledged masters in the professional arts.

It was under the Soviet Government that the folk art of the U.S.S.R. won its first international triumphs. Special mention should be made of the high distinctions and appreciation earned at the Paris World Exhibitions of 1925 and 1937.

The folk arts of the peoples of all the eleven constituent republics of the U.S.S.R. reflect the Socialist culture, displaying it in peculiarly national forms in astonishing richness and variety.

The environs of Moscow, the capital of the Soviet Union, are the home of an outstanding group of folk handicrafts. Here mention should first be made of the famous lacquered papier-mâché work of the peasant artel of Fedoskino, a village near Moscow, where the old traditions of this valuable craft are not only being guarded, but also improved and developed. The charm of Fedoskino lacquer work lies in its irreproachable quality of material and finish and in the beauty of its painting. It is distinguished by its vividness and freshness of colouring and intimacy of design, which embodies both the old traditional subjects and new themes suggested by Soviet life. The lacquer miniatures of Fedoskino are marked by



realism, a spirit of joy and decorative taste. They are in wide and popular demand.

Even closer to the national style are the painted trays of the Zhestovo and Novosilzevo artels, whose productions enjoy an enduring\* popularity for their virtuosity, their simple yet bold design, the strength, precision and confidence of their brushwork, and their broad decorative quality.

The villages of Abramtsevo, Kudrino and Akhtyrka, near Moscow, are noted for their wood carving, including furniture decorated with carvings in the folk style, often of considerable taste and effect. The craftsmen of Bogorodsk used to specialize in carved wooden toys, but are now going in more and more widely for carvings illustrating subjects drawn from folklore and from the life of the collective farms and the Red Army.

Rostov, an ancient town in the Yaroslavy Region, with a picturesque Kremlin, is the home of an artel of enamel painters, who produce decorative brooches, boxes and cigarette cases with delicate miniature designs.

The three villages of Palekh, Mstera and Kholui, in the Ivanovo Region, were before the Revolution famous centres of icon-painting, but have since become homes of a new folk art. Their skilled craftsmen, depositaries of the ancient art of icon-painting, were prompted by the Soviet Government and public interest to turn their traditional skill to the depiction of new subjects drawn from modern Soviet life, and within a few years a remarkable new form of art developed. Palekh work has won wide renown. The craftsmen of Mstera and Kholui have gone even farther along the road of realism, while at the same time preserving the best and most valuable features of their traditional folk art. They particularly excel in highly ornamental landscapes, executed with great feeling and serving as a background for scenes from the vigorous, healthy and happy Soviet life of today.

Khokhloma is a village in the remote forest district of the Gorky Territory. Its craftsmen produce wooden articles painted by hand on a lead ground and covered

with a layer of oil varnish. The effect is one of iridescent gold, flaming vermilion and deep velvety blue and black serving as a background for ornamental patterns laid on with a bold and confident brush. The style of the Khokhloma craftsmen had formerly been debased by gross and tasteless, so-called "modern" motifs, but the Revolution has directed it back to its original folk source—patterns of flowers and foliage—from which the craftsmen have been fertile in developing new motifs and designs.

Very much the same is true of the craftsmen of Shemogod in the North, whose work is known all over the world. With a keen knife, and without any preliminary drawing, they carve in birch bark designs of great intricacy and beauty based on realistic motifs.

Not far from Shemogod lies the ancient town of Veliki Ustyug, where the niello method of silver ornamentation has existed for centuries. The secret had almost been lost before the Revolution, but an old craftsman, the last depositary of the art, has since collected a group of young people round him and transmitted to them his knowledge and experience. An artel was formed which now produces jewellery of remarkable beauty. On a smooth silver background are depicted, in dark-blue silhouettes and lines, flowers, fruit, northern landscapes and cities, scenes of Soviet construction, incidents from the Revolution and portraits of famous people.

Still farther to the north, on the very shores of the White Sea, in Kholmogori, the birthplace of Lomonosov, the great Russian scientist, there is now once more developing a no less ancient art, ivory carving, which before the Revolution had almost died out. With the help and encouragement of the local Soviet and trade unions, three of the old craftsmen started a school in the art, and there is now quite a group of young craftsmen who do the most delicate work on ivory and sea-lion tusk. They are most successful in carving northern scenes in relief, but they are also expert in miniature sculpture.

A second ivory-carving centre has been restored in

Tobolsk, where in recent years young craftsmen have been producing group compositions depicting, with great simplicity, strength and fidelity of form, the life of the northern Soviet peoples, their cultural progress and their share in the political life of the country.

Further to the north-east, in Chukotka near Cape Wellen, the scene of the Chelyuskin epic, there is a third ivory-carving centre. The craftsmen are native Chukchis and it is difficult to imagine greater economy of style, yet complete artistic realism, than is displayed in their carvings of animals of the Far North. In addition to being good carvers, these Chukchi artists are masters of design. Their designs charm us by their fidelity to life, the keen observation they reveal and their precision of form. Their subjects are the life and habits of the Chukchis, northern landscapes, the rescue of the Chelyuskinites, and portraits of Lenin and Stalin.

Let us now turn from the Siberian shores of the Arctic to the more genial land of the Ukraine. Here too we find folk arts and crafts revived by the Revolution. The carpets of the Ukraine, with their magnificent designs of foliage executed on orange, puce and sky-blue backgrounds, are no longer the only product of her handicraft industry. Craft artels now weave expansive tapestries depicting the abundance of the Soviet land and the happy life of its folk, the exploits of the Red Army, and the great leaders of the revolution, Lenin and Stalin. The splendid rugs of Krolevets astonish and delight the eye with their original designs and new achievements in colouring. Ukrainian embroidery, in all its variety and beauty, is being adapted to new women's styles based on the original national costume. Ukrainian pottery is in a period of vigorous renaissance.

No less striking is the revival of the crafts of weaving and embroidery in Byelorussia.

Soviet Central Asia excels in *siuzanè*, the native embroidery—which entices the eye with its original designs and hues, in wood carving, in the traditional craft of pottery, and in metal ornaments. The rugs of Turkestan

abound in new designs, symbolic representations of Soviet themes.

Equally rich and varied are the native arts of the Caucasus and Transcaucasus. The metal workers of the village of Kubachi, perched high in the mountains of Daghestan, while jealously preserving the century-old traditions of their craft, produce astonishing new combinations of niello-work, engraving and gold inlay on steel and ivory. They make abundant use of their traditional themes, which were almost forgotten before the Revolution owing to lack of demand, but, like the Russian craftsmen, are lending greater richness and variety to them. They are now attempting complex composite themes expressive of the new Soviet life. The rugs and carpets of Daghestan and Azerbaijan are acquiring greater fidelity to the strict features of folk art, discarding their former eclecticism and adulterations of style induced by alien and commercial influences.

In Georgia and Armenia, the revival of the native crafts is most apparent in carpet weaving, in which new foliage designs are being successfully combined with the traditional motifs that formerly used to be employed both in carpet weaving and in the ancient art of miniature.

This survey, though brief and far from complete, will nevertheless show the flourishing state of the folk arts and crafts in the U.S.S.R. Demands of unprecedented extent are being made on the decorative arts for architectural purposes in connection with the tremendous development of cultural constructive work in the U.S.S.R.; and they are already finding a keen and eager response among the folk artists and craftsmen. The masters of Palekh and Mstera are employed in decorating and painting panels for Palaces of Culture, workers' clubs, Houses of Young Pioneers and theatres.

The Agricultural Exhibition which was opened in Moscow in 1939 made wide use of the services of folk artists and craftsmen for the decoration of the pavilions. Immense work will be required on the decoration of the Palace of Soviets now in course of construction in Moscow.

Here the utmost scope will be given to the creative initiative of the masters of folk art and for their collaboration with the finest architects, sculptors and painters of the first Socialist country in the world.

## CULTURAL PROGRESS AMONG THE NON-RUSSIAN NATIONALITIES OF THE U.S.S.R.

*By Yanka Kupala*

ORDER OF LENIN. POET LAUREATE OF THE BYELORUSSIAN  
SOVIET SOCIALIST REPUBLIC

“From great Moscow to the farthest border,  
From our Arctic seas to Samarkand,  
Everywhere man proudly walks as master  
Of his own immeasurable fatherland.”

THIS is what the Soviet people sing in one of their popular songs. In the Soviet Union man, irrespective of race or nationality, really feels himself to be master “of his own immeasurable fatherland.”

The old Russia of the tsars was a prison of peoples, the enslaved, cruelly oppressed people of the former Russian empire.

All national culture was severely repressed. In conformity with its policy of Russifying the various non-Russian nationalities, the tsarist government prohibited the publication of newspapers and periodicals in the various vernacular languages. Thus, for example, it did everything in its power to extirpate the Ukrainian language and Ukrainian culture. The very word “Ukraine” was banished from official usage. To get a book in Byelorussian published in those days, its author had to resort to all kinds of subterfuges, as, for example, to palm it off as a publication in a foreign tongue. The same obstacles to cultural progress were encountered by

all other non-Russian, or, as they were called, "alien" nationalities.

In many cases tsarism, while forcing the Russification of its "alien" nationalities, connived at the development of bourgeois nationalism in the cultural field, thus sowing discord among the various nations. Bourgeois national culture in the main reflected the interests and aspirations of the local feudal gentry and clergy, who by their servility and toadying tried to ingratiate themselves with the tsarist authorities.

Only the Great October Socialist Revolution and the establishment of Soviet power put an end to the inequality of the non-Russian peoples. Tens of millions of people ceased to be "aliens" and became equal citizens of the Soviet Union, enjoying equal rights and all equally its masters. In the struggle against their country's enemies, in the fight for the peaceful pursuit of their vocations and for the economic and cultural development of their fatherland, the Soviet people sealed the indissoluble friendship and voluntary union of all the nations of the Soviet state.

The Soviet state has insured each constituent nationality ample development for its native culture. The Soviet state solicitously assists the formerly most backward peoples in the relatively more rapid development of their economy and culture so that they may be on a par with the more advanced peoples and republics of the Soviet Union.

Many nationalities had to begin their cultural development from the A B C, that is, they had to create an alphabet, a written language of their own; they had to publish their first primers and grammars. In Kirghizia, in tsarist times, only one out of every two hundred persons could read and write. Many of its villages did not have a single literate person among their inhabitants. The illiterate Kirghizian used the print of his right thumb in lieu of signature.

Today the Kirghizian Soviet Socialist Republic has 1,672 schools, 15 vocational high schools and 3 higher

educational establishments. Before the Great October Socialist Revolution school attendance was only 4,000, while now there are 288,000 attending Kirghizia's elementary, secondary and high schools and institutes. Books in the Kirghizian language are published in large editions which find a ready market.

In Kazakhstan only one out of every hundred persons could read and write. Only mullahs and beys were literate in Uzbekistan. In 1914 only 93 Uzbek boys attended the secondary schools of Turkestan.

Matters were still worse as regards the education of women in tsarist Russia. Out of a female population of 82,000 in the Garm area in the Pamirs, only 7 women could read or write.

Before the Revolution, Byelorussia had 3,000 Greek Orthodox churches, 704 synagogues, 113 Roman Catholic churches and 5,000 licensed saloons, but not a single university or college. This disparagement of public education explains why three-quarters of its population could neither read nor write.

The people of Soviet Byelorussia now have their own institutions of higher education, their own scientific-research institutes, splendid new theatres, and an extensive system of schools, clubs, libraries, cinema theatres, health and educational institutions for children of pre-school age, publishing houses, and hundreds of newspapers printed in their own tongue. The cultural growth of the people, synchronizing with the great improvement in their standard of living and the rapid development of industry and agriculture, is truly marvellous.

I should like to cite here one instance of the numerous colossal changes that have taken place in the life of the working people of Byelorussia. There is in this republic a village called Mokhoyedi, meaning moss eaters. The very name speaks eloquently of the past life of its inhabitants. Until the Revolution almost all the land in and about the village—the meadows, fields and gardens—belonged to one big estate owner. All that was left to the villagers was bogs and woods—and these were about ten miles away

from the village. The villagers would grind and bake a mixture of dried moss, acorns and chaff. This was their usual bread.

Now Mokhoyedi, after having become a collective-farm village, is not to be recognized. Two sawmills, a hospital, an out-patient clinic, five schools and two clubs have sprung up in this village and its environs. There is a radio in almost every house. Gone is the former want, and virtually every peasant house now rings to the merry voices of healthy children, whose numbers increase considerably each year.

Life in the Byelorussian village of Mokhoyedi resembles life in any other Soviet village, for they have all shaken off the chains of darkness and oppression, and have awakened to a new life of prosperity, happiness and culture.

In the Ukraine about 80 per cent of the population was illiterate before the Revolution. Today both the Ukraine and Byelorussia are literate throughout.

The schools of the Soviet Ukraine employ a whole army of teachers—171,000. In the last five years alone the number of secondary schools in the Ukraine increased tenfold. In Uzbekistan the number of elementary and secondary schools has increased fourteen times during the last five years.

What is the distinguishing feature of the rights won by the working people of the Soviet Union through the Great Socialist Revolution? It consists in the fact that these rights have not only been proclaimed and enacted into law, but have also been effectively ensured. For example, every citizen in the U.S.S.R. has the right to education. The government has taken appropriate measures to ensure that this right does not remain an empty pledge, but is actually carried out in practice. One of these measures, adopted soon after the establishment of Soviet rule, provided that instruction in the schools should everywhere be conducted in the local, native tongue. This measure is rigorously enforced. The number of schools in the Soviet Union is increasing from year to year. Schools may now be found in every part of our vast country.



Let us consider another example—education, particularly child education, in the various districts of the Soviet Arctic, which are inhabited by the so-called small nationalities of the Far North: the Evenks, Nentsi, Khante, Mansi and others. All of them were utterly illiterate in the past. They did not even have any writing symbols of their own. The Soviet Government has given them an alphabet, has opened schools for them and published primers and other books. But this is not all. The population in the Far North is very sparse. The little northern hamlets, if they may be called that, sometimes have no more than four or five houses each and are situated many miles apart. Boarding schools have therefore been established in these parts where schoolchildren may live and study, being boarded free of charge and provided with all necessities. In general, it must be borne in mind that in the U.S.S.R. all education, including university and college courses, is absolutely free. Moreover, the majority of university and college students receive allowances from the state.

Higher educational establishments were altogether beyond the reach of the former "aliens." The multi-millioned Uzbek people did not have a single university. All the petitions of the Byelorussians to be allowed to open a university in Minsk were turned down by the tsarist government.

Now there are hundreds of higher educational establishments in the republics of the non-Russian nationalities. Before the Revolution there was only one Kazakh who had a university education while now there are 19 universities and colleges in Kazakhstan, attended by thousands of Kazakh students.

The cultural progress of the non-Russian nationalities can also be gauged by the increasing number of books and newspapers that are being published in scores of languages. In the R.S.F.S.R. alone books are published in more than one hundred languages. The library system is also growing. In 1913 Armenia had 3 libraries, in 1937—468. Only two newspapers were published in Azerbaijan in 1913, while now 123 are appearing. A total of 8,100,000

books were published in Azerbaijan in 1938. Approximately the same rates of development apply to the other republics also.

The cultural development and the broader outlook on life that come with improved material conditions in the U.S.S.R. have greatly promoted the disappearance of religious prejudices and tribal customs. This is seen particularly in the attitude towards women. In the Caucasus, Uzbekistan, Tajikistan and other districts where the incubus of ancient custom weighed heaviest of all, the law up to the Revolution obliged women to live in cloistered seclusion in their own homes.

In our day women are equal members of Soviet society. They can work and apply their talents in any branch of economy, science or arts. Latterly, many Soviet women have developed into outstanding writers, painters, pilots and scientists. Women collective farmers and factory workers, upon whose initiative a long list of innovations has been introduced in agriculture and industry, have gained wide renown in the Land of Soviets, where work and enthusiasm for work are so highly esteemed and honoured.

While remaining national in form, the culture of the peoples of the U.S.S.R. has acquired a new, Socialist content. Literature, theatre and art all radiate love of the Socialist country, love of that great cause to which the Soviet people are devoting their lives—the building of a new society. A spirit of cheerfulness, contentment and confidence in the morrow pervades all this cultural activity. It is full of vigour and energy thirsting for constructive employment. It scourges the prejudices of the past surviving in the psychology of men, and educates the people to cherish labour and practise solidarity and mutual comradely assistance.

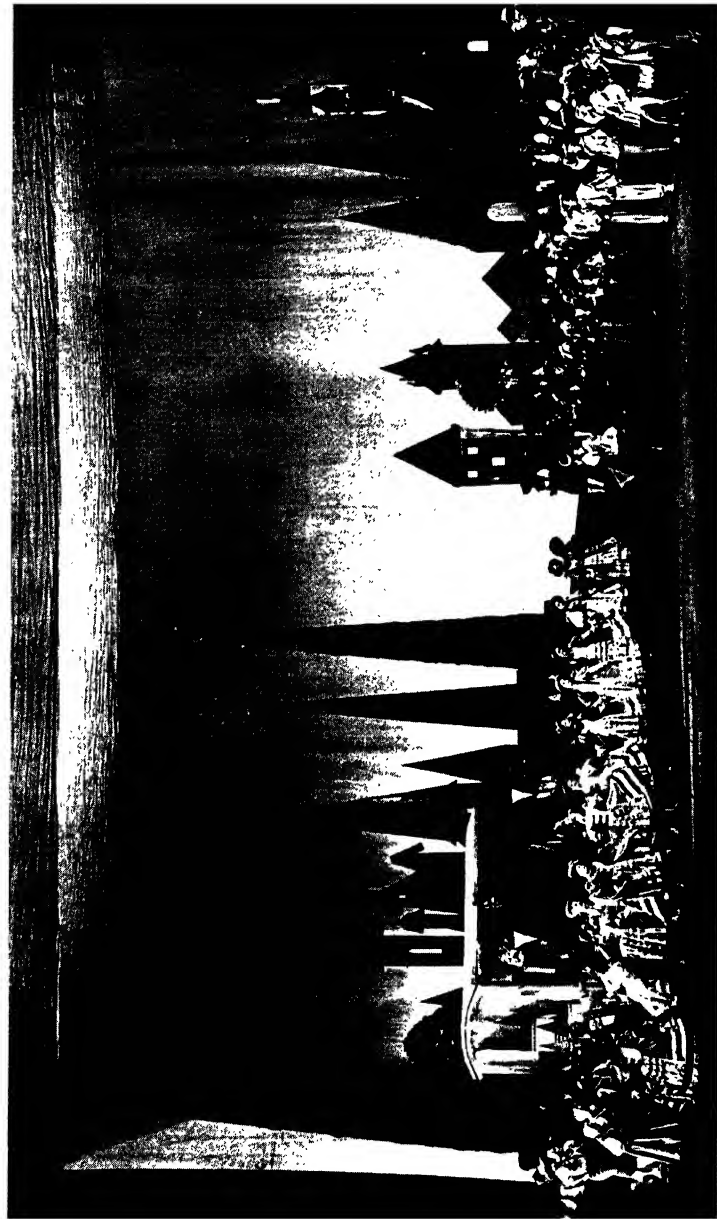
The tsarist government stirred up the flames of national enmity, incited nation against nation. In the U.S.S.R., on the contrary, we find its numerous peoples living in indissoluble friendship. It is this amity and the concerted struggle of all the peoples of the Soviet Union for

Communism that form the fountain-head of Soviet cultural development and bring the cultural achievements of one people within the reach and ken of all the others.

This sharing of national culture is particularly in evidence on such festive occasions as the country-wide celebration of the jubilee of some great writer or thinker.

In March 1939 the peoples of the U.S.S.R. marked the 125th anniversary of the birth of the famous Ukrainian poet Taras Shevchenko (1814-1861). Two hundred thousand people attended the unveiling of a monument to Shevchenko in Kiev. It was not only the Ukrainians—the proud compatriots of this freedom-loving poet—who celebrated his jubilee. It was likewise marked in all the other republics of the Soviet Union. There is now no corner in the U.S.S.R. where the name of this great bard has not become a household word. His poems have been translated into more than a score of languages. Translations of his collected poems have been published in Byelorussia, in the Caucasus and in Central Asia.

Great strides have been made during the last few years in collecting the folklore of the various nationalities. Songs and poems that have been handed down from mouth to mouth for ages are only now being committed to paper. Much is being accomplished along these lines in Kabarda, Daghestan, Armenia and other republics and regions of the Caucasus, among the nationalities inhabiting Central Asia, as well as among the Tartars, Bashkirs, Chuvash, and other peoples in central European Russia. Songs, tales and proverbs are being taken down from the lips of old, often illiterate, narrators and the singers of half-forgotten folk songs. Collectors of folklore are uncovering the golden strands of national genius. They call at one *aul* after another in the central Tianshan mountain range to add to their Kirghizian folklore anthologies. Upwards of 4,000 Kirghizian proverbs have already been collected, as have numerous legends, pastorals, fables, riddles, precepts, love songs, stories, anecdotes, sword songs (war songs), and so on. *Manas*, a Kirghiz epic poem of more



THE BOLSHOI THEATRE, MOSCOW

IN THE KALMYK REPUBLIC  
Writers and Artists



than 300,000 lines and a monument of oral literature, has been taken down in writing and thus preserved for all posterity. One of the versions of this epic about the ancient hero Manas, as recited by the story-teller Sagynbayev, consists of 240,000 lines of verse. *Manas* is a poem of supreme artistic value. It ranks with such great works as Firdousi's *Shah Nama*, the Russian epic *The Lay of Igor*, the Armenian epic *David Sasuntsi*, and the poem of the immortal twelfth-century Georgian bard Shot'ha Rust'hveli, *The Knight in the Tiger's Skin*. It is only during the last few years that Rust'hveli's exquisite poem has been translated into many of the languages of the peoples of the U.S.S.R. It has become a favourite of thousands upon thousands of book-lovers.

Thus, the cultures of the various nations of the Soviet Union—their music, sculpture, literature, and other intellectual attainments—mutually enrich each other, gain from each other's past and present achievements and adopt from each other all that is new, interesting and worthy of emulation.

Soviet national literature is developing at a rapid pace. The Ukraine, Byelorussia, Georgia, Armenia and Kazakhstan have produced many prominent writers in recent years. Even peoples who until recently had no written characters, no rules of grammar of their own, already have literary works produced by their own poets and playwrights.

Oral folk art, that vivid expression of the feeling and aspirations of the people, is flourishing side by side with written literature. Everywhere—in Turkmenistan, Dagh-estan, Armenia and the Pamirs—one can hear bards—*akyns* and *ashugs*, as they are variously called—improvise popular songs about the happy new life of the people and the great feats of its heroes. The songs of the Kazakh *akyn*, Jambul, an old man who has almost reached the century mark, are widely known to and equally loved by Russians, Ukrainians, Byelorussians, Georgians, and all the other nations of the Soviet Union. Here is an excerpt from one of his songs:

"In the dust lies tsardom, the tottering frame  
That stifled the people in darkness and shame;  
And twenty swift years did since supervene,  
Of magic creation, transforming the scene;  
O'er all freemen now shines the Soviet star,  
Armenian, Georgian, Russian, Balkar."

And Jambul, the golden-voiced bard of the Kazakh steppes, calls the Soviet land the home of happy song:

"Hark to the song of our country, its people,  
Mellifluent notes that stir the emotion,  
A chorus of nations singing of freedom,  
A conflux of tongues, as of rivers and ocean."

Musical development differs among the various non-Russian peoples of the U.S.S.R.

While the Ukrainians and Georgians have reached a high degree of musical development, there are peoples who are just learning the rudiments of this art.

During the last few years the musical theatres of Kazakhstan, the Ukraine, Georgia, Azerbaijan, Kirghizia and Uzbekistan have given performances in Moscow. These guest performances were grand festivals of national culture—of national music, song and dance.

To those who attended them they opened up a rich new world of music. The audiences were enraptured by the inexhaustible springs of folk melodies, each the product of centuries of cultivation. The operas they presented before the Moscow theatregoers were impregnated with the traditions and reflected the talent and accomplishment of many generations of unknown artists, stemming from the people. They captivated their hearers by their rich colour, fanciful rhythm, austere beauty, freshness, lucid tonality and fervency. The Georgian opera *Abesalom and Eteri*, the Azerbaijan opera *Kar-Oghy* and the Uzbek musical drama *Gyusara* have won great popularity in the Soviet Union. The lovely Georgian, Armenian and Ukrainian folk songs and the songs of other peoples are likewise becoming widely known and popular. The Soviet public has a high

regard for the people who are helping to develop folk art. It is interesting to note that Abdymas Maldybayev, a young Kirghizian composer and the author of numerous popular songs, has been elected by the people of Kirghizia to the Supreme Soviet of the U.S.S.R.

Many borderlands of tsarist Russia did not have the faintest conception of a theatre. Many languages did not even have an equivalent for "theatre," a word now adopted by and in current use in every tongue.

Today the theatre is one of the favourite forms of cultural diversion among the mountaineers of the Caucasus, the nomads of Central Asia and the hunters of the Arctic tundras.

Theatres and clubs have been set up in all republics of the non-Russian nationalities, and their number is increasing every year. Thus, for example, in Stalinabad, the capital of Tajikistan, there is a Tajik theatre of musical drama, a dramatic theatre, a theatre of the working youth and a children's theatre.

In Georgia there are now over 40 theatres, some of which have won fame throughout the Soviet Union, such as the Shot'ha Rust'hveli Theatre and Tbilisi Opera House.

The same applies to Armenia, Turkmenia, Kazakhstan and other republics. In Uzbekistan, for example, daily performances are now being given in 70 theatres.

The theatre is constantly winning more devotees among the inhabitants of non-Russian regions. The repertoires include the plays of Shakespeare, Lope da Vega, Gogol, Schiller and Beaumarchais, which have been translated and staged in more than a score of languages, and also the productions of Soviet playwrights.

The invention of cinematography remained unknown to the non-Russian inhabitants of Russia's borderlands for several decades. The film came to the mountain settlements of the Caucasus and the nomad camps of Central Asia at a very late date, that is, only after the establishment of Soviet power. Now it has become one of the most popular entertainments of these peoples. The



number of moving picture theatres and of portable film projectors is increasing from year to year. There is not a village or an *aul* in the country the inhabitants of which have not seen such Soviet film classics as *Chapayev*, depicting the exploits of that well-known hero of the Russian Civil War, *Lenin in October* and *Lenin in 1918*, devoted to the great leader of the Socialist Revolution, or *Alexander Nevsky*, which presents on the screen a heroic page from the Russian people's past.

Various republics have founded their own moving picture industries. The films produced by the Georgian cinema workers in the Tbilisi studios are prized throughout the U.S.S.R.

Russian culture with its many masterly productions in the fields of literature, painting, music, sculpture, architecture and the theatre has greatly influenced the cultural development of the non-Russian nationalities of the U.S.S.R.

About one hundred years ago the great Russian poet Alexander Pushkin foretold:

“Russia will know my name, familiar it shall grow  
In every living tongue through her great domain,  
To Slav’s proud son, to Finn, to Tungus, savage now,  
And Kalmyk, lover of the plain.”

Only now has this great poet’s prophecy come true.

The Russian language is everywhere eagerly studied. Russian literature is cherished by all the peoples of the U.S.S.R. as their own literature. There is not a village anywhere in the country that has not heard of Pushkin. His poems have been translated into almost all languages of the U.S.S.R. At the same time, the art treasures of the non-Russian nationalities, the gems of their folk art in the fields of literature, music and architecture, in turn enrich Russian art and literature. And this mutual interchange has borne fruit in richer and broader cultures for both the Russian and the non-Russian nationalities in the U.S.S.R.

## HOW THE WORKERS SPEND THEIR LEISURE

*By I. Korobov*

ORDER OF LENIN, ETC. BLAST FURNACEMAN. MEMBER OF  
THE SUPREME SOVIET OF THE UKRAINIAN SOVIET SOCIALIST  
REPUBLIC

I AM an old blast furnaceman. For forty years I have been working in the big iron and steel works in the city of Makeyevka, in the centre of the Donetz Basin. For eighteen years prior to the Revolution I never once had a real rest. We worked twelve hours a day, every day of the week. On Saturdays we would come to the works in the evening and leave on Sunday, after eighteen hours continuous work. We toiled like slaves—and not a single day of rest in eighteen years!

Thousands upon thousands of workers like myself would come home after a day of hard and wasting labour, dead tired and worn out, too exhausted to do more than throw ourselves down on our beds. I lived with my family—five of us—in one small stuffy room. There was no space to turn round. One could hardly breathe on account of the heat, bad air and the smell of cooking. It was particularly bad in summer. After the scorching heat at the blast furnace one could find no relief at home, and there was no place where one could take a shower or a swim. One could not cool off in the shade of a tree, because there were practically none. The only garden in the city belonged to the director of the works and was always guarded by two policemen. We workers were strictly forbidden to trespass in the garden. The only way to escape the heat was to go to sleep in some cellar.

Even if a man had had a chance to rest and get over his fatigue enough to want some rational recreation or fun, there was nowhere to go. There was no club, theatre, moving-picture house, or circus in Makeyevka; not even a public garden where one might take a walk, listen to music or dance.

It goes without saying that a worker could not even dream of a real vacation, of a trip to the country, to a health resort, rest home or sanatorium. Such things existed only for our bosses, not for working men.

The October Socialist Revolution has brought about a complete change in the life of the working people. From the very outset the Soviet Government introduced the eight-hour day. A law was passed providing for vacations with pay for all workers and office employees. The working day for adolescents was reduced to four or six hours. A four- to six-hour day, without a reduction in wages, was introduced in industries that are injurious to health.

The successful economic development of the Soviet Union and the increasing improvement in the well-being of the working people enabled the Soviet Government to reduce the working day still further. On the tenth anniversary of the Soviet power the Central Executive Committee of the Union passed a law introducing the seven-hour day in the overwhelming majority of industries throughout the country.

At present the workers of the Soviet Union have the shortest working day in the world—seven hours—and the shortest week—working five days and resting the sixth.

Office employees and brain workers have a six-hour day.<sup>1</sup>

Every worker and office employee in the Soviet Union gets an annual vacation with full pay for at least two weeks. Young people under eighteen, as well as persons employed in industries injurious to health, and many categories of office employees, teachers, engineers, technicians and scientific workers, get an annual vacation of from one to two months with full pay.

While ensuring every citizen of the country the right to rest and leisure by the institution of annual holidays with pay and the introduction of the seven-hour day, the Soviet Government has also created all the necessary conditions enabling the working people of the Soviet Union to make the best use of this right.

<sup>1</sup> This was written in 1938. Today, as a result of the war, the length of the working day has been increased.

All the health resorts and sanatoria in the Soviet Union are the property of the state. Palaces, villas and mansions which formerly belonged to members of the tsar's family, princes, landlords and capitalists, have now been converted into sanatoria and rest homes for the working people. In addition to these, the Soviet Government has built a large number of new fine health resorts, sanatoria and rest homes.

Recently I took a rest and cure in Sochi-Macesta—one of the best health resorts in the Caucasus. Here I spent a month in the magnificent sanatorium of the People's Commissariat of Heavy Industry. The sanatorium is situated in a picturesque spot overlooking the Black Sea. Like all the other guests in the sanatorium I had a bright, comfortable and nicely furnished room. I took baths in Macesta, which is famous all over the world for the excellent health-giving qualities of its waters.

Citizens who are in need of a cure appear before a medical commission which assigns them to the health resorts and sanatoria best suited to improve their health.

The majority of those who go to health resorts and sanatoria do so at the expense of the State Social Insurance Fund or their respective trade union funds, as well as of the funds of the factories or institutions in which they are employed.

Citizens who are in no need of special treatment or regime can spend their vacations in rest homes. But here, too, the guests are under the observation of doctors and adhere to a definite daily routine, so as to enable them to derive the greatest possible benefit from their vacation. The rest homes are also housed in fine buildings—in former villas and palaces or in beautiful new hotels specially built for the purpose by the government. As a rule the rest homes are situated in beautiful surroundings, in woods, on river banks and by the seashore.

There are various facilities in the rest homes for sports and indoor games. The guests have at their disposal boats, bicycles and so forth. There are frequent excursions conducted by experienced guides. Those who wish can go on

long hikes, on boat trips or motor drives. Each rest home has a good library with a large selection of books. In the evenings there are moving pictures, concerts or lectures.

Our Makeyevka iron and steel works alone has several excellently equipped rest homes for the workers and their families, situated in the picturesque environs of the city. In addition, we are allotted every year a large number of places in the best rest homes and sanatoria of the Soviet Union.

Large sums are appropriated annually by the government and the trade unions for the upkeep of the health resorts, sanatoria and rest homes. More than one and a half million workers are accommodated during the year in rest homes alone at the expense of the trade unions.

In addition to the rest homes in which people spend their annual vacation, there is a large number of one-day rest homes. Hundreds of thousands of workers and other employees spend their free days in these rest homes, where, freed of all cares, they are served four wholesome and tasty meals a day and provided with a wide choice of facilities for recreation. The visitors to a one-day rest home can join an excursion or go out rowing, or play volleyball or tennis. Many working people come to these rest homes with their families. In 1938 the trade unions alone sent 600,000 of their members to one-day rest homes.

Health resorts, sanatoria and rest homes are not the only places where the working people of the Soviet Union can spend their vacations. Large numbers of people prefer to travel. The Soviet Union is a vast country, extending over one-sixth of the earth's surface. Lured by the severe yet fantastic beauty of the Arctic, by the luxurious and ever-green vegetation of the sub-tropical districts of the Black Sea coast of the Caucasus and Crimea, by the virgin forests of Siberia, by the stately mountains of the Altai, Tian Shan, Pamir, and the Caucasus ranges, by the broad expanses of the Volga, and by the beautiful lakes and cataracts of Karelia, tens of thousands of working people spend their vacation as tourists, travelling and seeing their

magnificent country. They travel not only by rail and steamer. Very often they hike or row, or go by bicycle or automobile. Trips on the new canals—the White Sea-Baltic and the Moscow-Volga—have also become very popular in recent years. A fleet of beautifully appointed modern vessels plies the waters of these new waterways.

Many spend their vacation visiting new industrial construction sites, hydroelectric stations or newly-built cities and towns. More than 230 such cities and towns have sprung up since the Revolution.

In the old days I saw nothing of the world beyond my own Makeyevka. The farthest trips I made in those times took me about five or ten miles out of the town. While I lived in the Donetz Basin I saw nothing but my own town, the works and the mines in the immediate vicinity. Nowadays I take a long trip every year. Before the Revolution I never went to Moscow. At present I have occasion to visit that city frequently. I go to health resorts. I visited Magnitogorsk—the new great industrial centre—where my son worked as director of the iron and steel works. On free days I sit down at the wheel of my own motor car, which was given to me as a premium by the People's Commissar of Heavy Industry, and take my family on trips about a hundred miles outside the city, through picturesque country of whose existence I was ignorant in the old days.

Mountain climbing has also become a popular sport in the Soviet Union. Every year whole tent cities are set up on the plateaus and amid the alpine meadows of the Caucasian and Altai Mountains. In 1937, about 20,000 people took part in various mountain-climbing expeditions. Here is a characteristic detail: From 1829 to 1914 altogether 59 ascents were made to the peak of Mt. Elbrus, the highest mountain in Europe, and of these 47 were by foreigners; whereas in the one year 1935, 2,016 Soviet mountain climbers scaled this peak. In 1938 more than 20,000 people took part in mountain-climbing expeditions.

The Soviet Government does everything to encourage travel as one of the best ways of spending a holiday. It

is building many new hotels and camps for tourists, improving transportation and increasing the output of tourist equipment.

Needless to say, the leisure of a Soviet citizen is not confined to his annual holiday. Our workers do not slave at their jobs. After a day's work the Soviet worker does not feel exhausted. He comes home full of vigour and high spirits. He has enough leisure left, which he can spend in a club, theatre, etc. In our city of Makeyevka we have three fine workers' clubs, excellently equipped, with study classes and various amateur art circles. We have a big theatre, four moving-picture houses and a first-class circus. The former wretched town of Makeyevka bears no resemblance whatever to the present transformed, really cultured and well-kept city. In the old days nobody felt like going out. In the summer the streets were covered with dust, and in the fall and spring the mud was knee-deep. Today the pavements and squares are covered with asphalt, the paved streets are lined with many new houses, and there are trees and grass. The small garden which formerly belonged to the director of the works has been extended, improved and turned into a public park. A fine new park—the Northern Park—has been planted. We have now an excellent swimming pool. The sports grounds of the city are always crowded with young people. There is always something going on on the running tracks, soccer fields, boxing rings, tennis courts, etc.

In 1914 Russia had 222 clubs all told. They were open only to noblemen, merchants, army officers and higher officials. Today there are nearly 96,000 clubs in the Soviet Union, including 65,000 clubs in the countryside.

The collective farmers lead a happy and prosperous life, and like the working people of the cities they want to spend their leisure in cultured and interesting recreation. The Hammer and Sickle Collective Farm in the Donetz Region, for instance, has built itself a palace of culture with a theatre seating 400, a library and reading-room, a sound picture installation, rooms for games, etc. The collective farmers' club at the village of Ekaterinodarskaya

(Kabardino-Balkarian Autonomous Soviet Socialist Republic) has a fine auditorium and special rooms for games and various activities, such as an amateur orchestra, a choir, a dramatic circle, a scientific agriculture circle and the like, as well as a reading-room and billiard-room. In the village of Shushenskoye, Krasnoyarsk Territory, situated in a remote part of Siberia, where in the 1890's V. I. Lenin lived, exiled by the tsarist government, a great deal of construction has been going on in recent years. A hospital and a club with an installation for sound moving pictures are already functioning. An electric power plant and a large club house are under construction. A monument to Lenin is to be erected in the near future. A health resort for collective farmers has been built in the vicinity of Shushenskoye, on the shores of Tartar Lake.

" Cinemas, theatres and museums enjoy great popularity. Theatres in the Soviet Union always play to full houses. The same applies to moving picture theatres. Their number has been constantly increasing. Thus, in 1914 there were 153 theatres and 1,412 cinemas in Russia; whereas in the Soviet Union at the beginning of 1939 there were 790 theatres and more than 30,000 cinemas, including about 19,000 in villages. Collective farm theatres have also sprung up. In 1937 their number reached 207. Children's theatres exist in many cities.

The Soviet Government has opened up numerous parks of culture and rest providing a variety of entertainment and recreation for their visitors. Here the visitor finds sports grounds and stadiums, swimming pools, games, theatres, cinemas, dance halls, various amusements, reading rooms, exhibitions, etc. The parks are particularly frequented on free days. Working people come here with their families and spend the whole day, while their children are taken care of in special "children's towns" run under the supervision of experienced educators. In the winter the parks of culture and rest offer facilities for skiing, skating, tobogganing, etc. Most of the cities and many villages in the Soviet Union now have their parks of culture and rest.



Before the Revolution, sports were the pastime of the aristocracy and the rich. The workers, exhausted with toil and subsisting on semi-starvation wages, had neither the strength nor the means to engage in sports. No wonder therefore that in 1913 there were not more than twenty athletic clubs in the whole of Russia. It is only since the Revolution that sports and athletics have become a popular pastime of the masses.

At present there are more than 30,000 athletic clubs and sports circles in the Soviet Union, many of them in the villages.

More than 10 million people in the Soviet Union now engage regularly in sports and athletics. They have at their disposal 650 stadiums, 7,200 specially equipped sports grounds, a hundred houses of physical culture, 350 aquatic sports stations, and 2,700 skiing stations. Athletics and sports are increasingly encouraged by the government and the trade unions.

The right of citizens of the Soviet Union to rest and leisure is incorporated in Article 119 of the Constitution of the U.S.S.R., which states:

“Citizens of the U.S.S.R. have the right to rest and leisure.

“The right to rest and leisure is ensured by the reduction of the working day to seven hours for the overwhelming majority of the workers, the institution of annual vacations with full pay for workers and employees and the provision of a wide network of sanatoria, rest homes and clubs for the accommodation of the working people.”

## PARKS OF CULTURE AND REST IN THE SOVIET UNION

*By K. Ivanova*

DIRECTOR OF THE GORKY CENTRAL PARK OF CULTURE AND REST, MOSCOW

Moscow, the capital of the Soviet Union, can well be proud of its Central Park of Culture and Rest. This park, named in honour of the Great Russian writer, Maxim Gorky, stretches for four and a half miles along the right bank of the Moscow River. Every day from sixty to seventy thousand people visit its grounds, restaurants, cafés, theatres and other places of recreation and amusement. On free days and holidays the number of visitors increases to 250,000 and even 300,000.

The Gorky Park of Culture and Rest has become a favourite place for rest and rambles. Each year two million flowers are planted in its gardens. Dozens of splendid statues, vases and rippling fountains adorn its spacious grounds. Cosy summer houses, grottoes and bandstands are dotted here and there near the shady avenues and on the banks of its ponds. A wide embankment stretches along the Moscow River, the banks of which are faced with granite.

Prior to the Revolution Moscow had no modern public parks or gardens. The Central Park of Culture and Rest was laid out at the beginning of the First Five-Year Plan period.

The workers of the Moscow factories and mills took the initiative in founding the Park. Tens of thousands of Moscovites participated in the work of laying out the grounds and in the construction of the various park buildings. The best architects, horticulturists and artists designed the decorations for the Park.

The fondness of the Moscow people for the Park they have helped to create and its popularity throughout the

whole of the Soviet Union are to be explained not so much by the natural beauty of its grounds as by the wide choice of facilities for interesting, cultured recreation that it provides to millions of people.

One of the distinguishing features of the Gorky Park of Culture and Rest is that it combines rest in picturesque surroundings with wholesome, rational recreation. The numerous visitors who throng the Park have a wide choice of varied forms of recreation and amusement—concerts of light music, symphony concerts, all sorts of sports, choir circles and opera performances, popular lectures and talks on science, art, literature, technology, etc.

Enclosures for sun bathing and shower baths have been built on the Parks' spacious grounds. Today the Park has more sports grounds than there were in the whole of Moscow twenty years ago. Thousands of young men and women come here to play volleyball, basketball, tennis and other outdoor games. Specially equipped ground for light athletics and gymnastics, water sports facilities, a small stadium, boxing rings, rings for wrestling and acrobatics, shooting galleries, croquet and bowling courses, shuffle boards, etc.—all of these are at the disposal of the visitors.

In the winter the central lawns and avenues of the Park form an excellent skating rink with an ice surface of 100,000 square metres. About 20,000 people skate here every day. Several skiing stations cater to skiing fans, and there are also slopes for ski jumping—from nursery slopes for beginners to steep fifty-metre inclines for the trained and experienced sportsman.

Visitors to the Park can engage in all the available forms of sports under the guidance of experienced instructors. Thousands of people have learned to skate, ski, swim and row in the Central Park of Culture and Rest. The best sportsmen of Moscow and of the Soviet Union regularly appear in contests held in the Park, which is also the scene of international sports tournaments.

Through the medium of its six theatres, its circus,

cinema theatres and a score or so of bandstands for its many orchestras, the Park acquaints its visitors with the best productions of classical and contemporary art and music as well as with the art and music of the people of the U.S.S.R. Leading theatrical companies from all over the Soviet Union perform on the Park's indoor and open-air stages. Eighteen theatres performed in the Park during the summer of 1938. The Green Theatre of the Gorky Central Park of Culture and Rest is the largest open-air theatre in the country. Magnificent mass performances in which thousands of people participate are staged here before audiences of 20,000. The Bolshoi Theatre of the U.S.S.R., which has been awarded the Order of Lenin for its outstanding merits, presents its best operas and ballets here every year. During the performance of *Carmen*, the huge stage of the Green Theatre represented a replica of the square in Seville, and an arena for bull fighting. About 200,000 people saw the picturesque ballet, *The Caucasian Prisoner*, presented by the Bolshoi Theatre.

One of the most interesting aspects of the Park's activities is the development of amateur art. Every evening directors of amateur art activities organize impromptu choruses among the visitors to the Park and coach them in new songs. Thousands of people come to the Park to dance, or to learn folk dancing, music, or drawing. The various competitions and contests in recitation, dancing and music organized in the Park attract hundreds of participants. The best amateur art circles give daily performances and concerts in the Park's theatres.

The Soviet people display a keen interest in all branches of science and knowledge. The Park's special lecture rooms, reference and consultation rooms and laboratories provide its visitors with every facility for acquiring popular knowledge on recent developments in the sphere of science, technology and literature. Prominent scientists, professors and academicians deliver lectures and demonstrate their work and experiments to Park audiences. In addition to attending lectures, viewing exhibitions, films

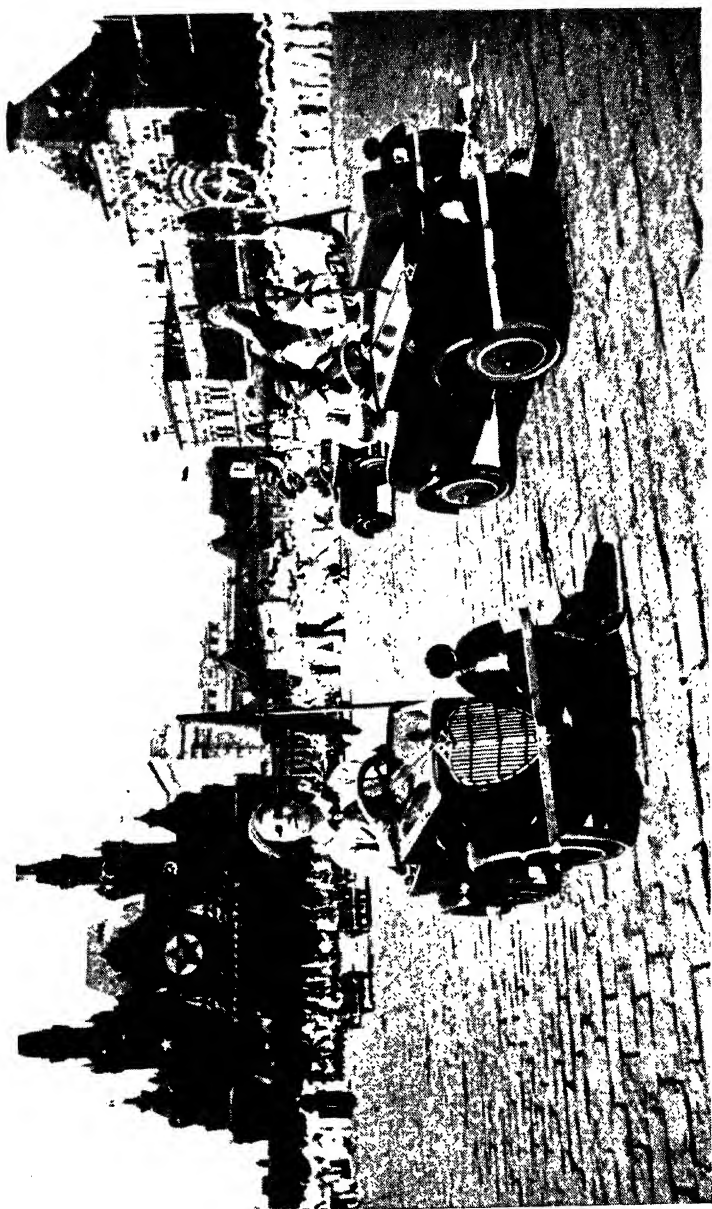
on technology, etc., visitors to the Park are given the opportunity of carrying out various experiments, of studying new technical equipment and applied technology under the guidance of skilled instructors. From ten to twelve exhibitions dealing with various branches of science and technology are held in the Park every year.

Leading Stakhanov workers demonstrate new methods of work to Park visitors. Contests in skill between workers of various trades (electric welders, moulders, cable layers) arouse great interest among the people who visit the Park.

The reading rooms of the Park offer a tremendous variety of books, newspapers and magazines. The Lenin Public Library, the largest library in the Soviet Union, has a branch in the Park which contains over forty thousand volumes. The Park lending library issues three thousand books a day.

Writers and poets read their works to Park audiences with whom they also discuss their new books. "Poet's Day" has become one of the traditional events arranged by the Park. On this day from fifty to sixty of the leading poets of the country recite their verses to Park audiences. Important dates in the history of science, technology and literature are marked by the organization of special exhibitions, lectures and meetings. During the summer of 1938, for example, a session of the Academy of Sciences of the U.S.S.R. dedicated to the 750th anniversary of the *Lay of Igor*, an outstanding work of Russian literature, was held in the Green Theatre of the park, at which Academician V. L. Komarov, President of the Academy, delivered a lecture on the subject to a large audience. The intrepid Soviet polar explorers, Papanin, Krenkel, Shirshov and Fyodorov, told a large audience in the Green Theatre of the results of their work on the drifting icefloe at the North Pole.

The political activity of the population, the keen interest displayed in international politics and events at home have made it necessary for the Park administration to devote great attention to educational work in this sphere.



CHILDREN'S DAY  
In the Red Square, Moscow



MOSCOW ATHLETES  
Parading in the Red Square

Experienced lecturers conduct informal talks and consultations and reply to thousands of questions put by visitors to the Park, illustrating their talks with the help of geographical maps, charts, etc.

All of this work is organized in such a way as to satisfy the requirements of the people who visit the Park. Romain Rolland, that eminent French author, wrote after visiting the Park: "The splendid thing is that rest in this park serves as a source of education in joyous surroundings."

The Park possesses a whole system of highly entertaining and interesting forms of amusement. These include popular outdoor games, indoor pastimes, puzzles and riddles, numerous forms of lively, amusing contests, including a comical steeplechase, harlequinades, and many other features, where every visitor can display his or her dexterity, pluck, resourcefulness and ingenuity.

The Park also has many other attractions—merry-go-rounds, a device for looping the loop, a tower for parachute jumping practice from which 330,000 parachute jumps were performed in the last five years, etc.

The great solicitude shown for the growing generation in the U.S.S.R. is reflected in the activities of the Park. Visitors to the park may leave their children at the special "Children's Village" where the youngsters have the use of well-equipped athletic fields, playgrounds, interesting demonstration halls, laboratories of popular science, garden plots for experimenting, miniature zoological gardens, work rooms, etc. The "Hall of the Young Technician" provides the children with all facilities for work with constructor sets, for studying radio, photography, automobiles, cinema apparatus, etc. In the "Hall of Interesting Pastimes" the children can draw, do sculpture or embroidery, etc. There are special music rooms and rooms containing a varied collection of toys. Another attraction is the pond with a motor boat and a whole fleet of canoes and row boats. The "Children's Village" has a track for automobile and bicycle races, aquariums, a terrarium, etc., as well as its own reading room and



library. The "Children's Village" caters for over ten thousand children daily.

The main forms of recreation in the "Children's Village" are the interesting collective games which enable the children to display their initiative, ingenuity and ability in path finding, etc. The games are so organized as to provide ample scope for the children's interest in adventure and heroic exploits. On the day of the completion of the Moscow to America non-stop flight, an interesting game called "Following the Route of the Heroes" was organized in the Park. During the winter school recess thousands of children participated in a lively game called "A Journey to the Arctic," staged on the Park's skating rinks. Large dummy "ice-breakers" took the children on a "trip to the Arctic," to study the work and equipment of the "Arctic Polar Stations." At these "Arctic Stations," located in the Park of Culture and Rest, the children were met by polar explorers and aviators who participated in the rescue of the *Chelyuskin* expedition—heroes about whom the children have read so much in books. But this interesting game was not confined to the territory of the Park of Culture and Rest. The winterers of the far-off Arctic and even the crew of the ice-breaker *Sedov*, ice-bound and drifting in the Polar region, established contact with the children over the radio.

Interesting and gay festivals attended by popular heroes, actors and scientists are organized for the children.

For the younger children of pre-school age there is a "Tiny Tots Town" where they are under the constant observation of experienced teachers.

The Park provides entertainment and service to its visitors throughout the entire day. For a small charge, visitors to the park can spend their free day at one of the "One-Day Rest Homes," situated in the most picturesque parts of the Park. These rest homes provide meals, sports equipment, arrange visits to the various theatres and amusement centres in the Park. All of this is included in the price of the ticket to the "One-day Rest Home."

The Park is not only a place for rest and cultural recreation; it also serves as the scene of huge mass festivals and mass meetings. The annual Railwaymen's Festival, at which L. M. Kaganovich, People's Commissar of Railways, addresses meetings of railway workers, is held in the Park. The Park saw the start and finish of some of the outstanding long-distance races and flights held in the Soviet Union. It is in the Park of Culture and Rest that the people greet their heroes. It was here that Chkalov, Baidukov and Belyakov, that Gromov, Yumashev and Danilin were greeted after their renowned Moscow-American non-stop flights. Public festivals are organized on holidays such as May Day, Constitution Day, Aviation Day, Railwaymen's Day, etc.

The Park has introduced a number of new mass festivals, previously unknown in Russia. These include the now traditional "Moscow Carnival," the "Youth Carnival," the "Festival of Music and Song," the fireworks displays, etc.

The fact that the Park is visited by a multitude of people demands a very efficient organization of its work and high quality service. It must be pointed out that all service in the Park is within the financial means of the entire population. The Park's theatres, amusement centres, restaurants, cafés, etc., charge low prices while most of the educational facilities are free of charge. The trade unions and certain other institutions subsidize some of the activities in the Park. It has become possible to organize the varied activities of the Park and bring them within the reach of the entire population only as a result of the gratuitous participation of numerous public organizations in its work. These include museums, libraries, scientific research institutes, sports societies, clubs, etc. In addition to its 5,000 full-time employees the Park has a large number of volunteer workers who co-operate in the organization of its cultural activities.

The Park is closely linked up with the Moscow population. Its plans of work are discussed at numerous meetings and in the factories and clubs. The Moscovites who visit

the Park view its work with a critical eye and make many suggestions and proposals.

The activities of the Park are directed by a public council under the Director of the Park. The council includes prominent scientists, artists, technicians, sportsmen and workers of Moscow.

Activities in the Park will assume still broader scope in the near future. According to the plan of the reconstruction of Moscow the area of the Park will be increased to five times its present size. Many new buildings, including a Palace of Youth, a Children's Palace, a new theatre, stadiums, etc., will be erected.

The Gorky Park of Culture and Rest is Moscow's central park. But the capital has ten other parks of culture and rest (not including the gardens and parks in the outskirts of the city) and 28 parks of culture for children. All of these parks provide practically the same facilities as the Gorky Park, only, of course, on a smaller scale.

Based on the model of the Gorky Park of Culture and Rest, the oldest one in the country, over 600 parks of culture and rest have been laid out in various cities of the Soviet Union in the last ten years. There are large parks of culture and rest in Leningrad, Kiev, Kharkov, Baku, in the workers' settlements in the Donetz Coal Basin, the Urals, the Kuzbas and other industrial centres. Parks of culture and rest have been established in Central Asia, in the Far East, and in the Pamirs.

In recent years parks of culture and rest have also been organized in the countryside, in collective farms and state farms. Many rural parks of culture and rest have been established in the Ukraine, the Caucasus and the Crimea.

The number of parks of culture and rest in the U.S.S.R. increases with every passing year. The Soviet people wish to lead a happy life and rest in cultural surroundings. The right to rest and leisure is inscribed in the Constitution of the Union of Soviet Socialist Republics and the Soviet state provides the people with all the facilities to exercise this right.

## SPORT IN THE U.S.S.R.

*By A. Starostin*

BADGE OF HONOUR. CAPTAIN OF THE "SPARTACUS" SOCCER TEAM

**P**HYSICAL culture in the Soviet Union is a matter of importance to the state. The government considers it its duty to widen the popularity of sport, and thereby to improve the health of the people and harden them physically for labour and defence.

Under the auspices of the government there is a special committee whose function is to foster the development of physical culture and sport. This committee directs the activities of the numerous sports societies in the country.

The amateur sports clubs aim for mass membership. There are sports clubs and societies not only in the cities but in the countryside, the army and the navy. Over ten million people are organized in sports societies, sports clubs and kindred bodies. Twenty million schoolchildren engage in various sports in specially equipped gymnasiums and playgrounds.

The sports societies concentrate mainly on all-round physical development. All members of sports societies must undergo a course of athletic tests so as to qualify for the "Labour and Defence" Badge. These tests include running, long-jumping, throwing, swimming, rowing, shooting, etc. The tests are graded according to age and sex: reduced standards for children (from 13 to 16 years of age), adult standards ("first degree"), advanced standards ("second degree").

All who pass the test are awarded a special badge, the likeness of a runner embossed on a red five-pointed star, superscribed "Ready for Labour and Defence." There is also a special badge for children, inscribed "Be Ready for Labour and Defence."

Aspirants for the badge are tested all the year round by specially-appointed instructors at sports grounds, aquatic

sports stations and bathing beaches in the summer and at skating rinks, indoor swimming pools and skiing stations in the winter time.

Millions of schoolchildren, lads and girls, adult men and women and even middle-aged people are proud bearers of the "Labour and Defence" Badges. By January 1, 1939, there were 5,815,000 holders of the first degree badge, and 71,000 holders of the second degree. No less than 1,091,000 schoolchildren passed the juvenile test.

As a result of the rising standard of living in the U.S.S.R. and the extensive promotion of sport the average stature of young workers called up for the army has in the last six to seven years increased by 1.07 inches, their weight by almost five pounds, and their chest measurement by 8 6 inches.

The state is creating the material basis for a wide development of sports in the country. There are now 650 large stadiums, 7,200 sports grounds, 100 physical culture clubs, 350 aquatic sports stations and 2,700 skiing clubs. In 1938 alone, over 600 million rubles were expended on the promotion of physical culture and sport.

The stadiums, tennis courts, indoor swimming pools, riding schools, skating rinks and race courses are always crowded with spectators.

On big days the Dynamo Stadium in Moscow, one of the largest in Europe, has a gate of 75,000. In recent years first-class stadiums have been built in all the main cities in the Soviet Union, each with accommodation for tens of thousands of spectators. Moscow is now building a stadium to accommodate 140,000 spectators. Sports grounds, sports clubs, physical culture clubs and gymnasia are functioning in all parts of the country. Collective farms are building stadiums of their own.

These amenities are the property of the Soviet people, the Soviet young generation. All sports clubs are open to any citizen of the U.S.S.R. who is interested in sports. All he has to pay is a small membership fee and he is amply provided with all the necessary tackle and equipment. He also has instructors and trainers at his service, and is kept

under constant medical observation by doctors on the premises.

The U.S.S.R. has six special colleges and twenty-five schools for the training of specialists in physical culture. In addition there are special physical culture departments in twenty teachers' training colleges. In all these institutions tuition is free. Furthermore the students receive a regular monthly allowance from the state and are provided with living quarters.

Soviet sportsmen are not professionals. They are free from the tutelage of promoters and managers, whose existence is inconceivable in the U.S.S.R. For Soviet citizens sport is not a means of making money. The Soviet sportsman goes on working at the job—in the foundry, at the wheel, on the farm, at the flying field, in the laboratory or the weaving room. For instance, the two brothers, Seraphim and George Znamensky, Sportsmen of Merit and champion runners, are studying at the Institute of Medicine; Mikhailov, Sportsman of Merit and champion boxer, is working as a chauffeur. The world famous Soviet chess player Botvinnik is an electrical engineer and research worker.

Hero of the Soviet Union Gromov who flew non-stop from the U.S.S.R. to America over the North Pole was at one time a champion weight-lifter. Soviet sportsmen have no fear of losing their jobs while competing in sports events. They are paid their average earnings for all time taken off for this purpose.

Soviet sportsmen are not left high and dry when time brings their sporting career to a close. They still have their staple profession to work at.

The extent to which physical culture and sports have taken root among the Soviet people is shown by the following facts. At Kuibyshev, a large town on the Volga, a whole family, the Kochetkovs, entered for one of our numerous cross-country runs, which are so popular in the U.S.S.R. The fifty-year old mother took part in the 500 metres (about 550 yds.) with her two youngest daughters. Her eldest daughter was the winner of the 1,000 metres.

Her son, a locomotive engineer's assistant, ran in the 3,000 metres. Another son, an airman, took part in the 5,000 metres. Her son-in-law broke the ribbon in the 3,000 metres. It is interesting to note that the mother ran the 500 metres in 1 minute 50.5 seconds. She trained for the race at a local stadium. The Kochetkovs have endowed a family prize for the best showing in cross-country running.

Another all-sporting family is Chistyakov's, the Soviet film actor who appeared in *Mother* and other well-known pictures. Chistyakov himself, formerly a prominent cyclist and hammer-thrower, though already 58, is still seen on the sports grounds competing in the veterans' class. His daughters are first-class skiers and his son is a famous cyclist.

The writer can say the same of his own family. Both my elder brothers are football players and hockey players, and Sportsmen of Merit. I am the captain of the Spartacus eleven, the Moscow team which stands at the top of the league and won the U.S.S.R. Cup in 1938. We have all been decorated by the government for our achievements in sport. A fourth brother, the youngest, also plays hockey and football. Our sister is a hockey player and tennis player. My sister-in-law is a champion motor-cyclist and is well known as a tennis player and hockey player.

All varieties of sport are cultivated in the U.S.S.R. The most popular of them are light athletics, gymnastics, skiing, football, volleyball, basketball, tennis, cycling, swimming, rowing, yachting, skating, parachute-jumping, ice-hockey, boxing, weight-lifting, wrestling, Rugby football, horse-riding, shooting, hunting, fencing, motoring, motor-cycling, motor-boat racing, mountain climbing, etc., etc., altogether over fifty kinds of sport.

Sports like light athletics, gymnastics and football have spread phenomenally. Soccer is played by hundreds of thousands of people and the number of spectators during the season runs into millions.

In the last few years Soviet football teams have played several times against crack foreign teams, at home and

abroad. These matches have shown the high standard of Soviet soccer.

To Soviet sportsmen records are not an end in themselves. They are a natural result of well organized mass training. Our masters of sport are showing remarkable prowess. In weight-lifting Soviet athletes hold world records and are constantly improving upon them. Of the 35 world records for bar-bell lifting 23 belong to Soviet athletes.

Shooting as a sport is also highly developed in the U.S.S.R. Among its traditions are the contests which take place nearly every year between rifle clubs here and rifle clubs in the U.S.A. Soviet marksmen hold nine world records.

Among Soviet swimmers is the world-record winner Semyon Boichenko. He has beaten world records time and again. He swims the 100 metres, breast stroke, in 1 minute 6.8 seconds and the 200 metres in 2 minutes 36.2 seconds.

Soviet skaters too are a credit to Soviet sport. Often they have excelled the best skaters in the world—the Scandinavians. The world record for the 1,500 metres belongs to a Soviet skater, Maria Isakova, who covered the distance in 2 minutes 37.4 seconds and beat the record of 2 minutes 38.1 seconds made by Skou Nilsen, the Norwegian woman skater.

There are many annual sports contests in the U.S.S.R. There are special championships for the various sports societies in the army, the navy, the rural districts and universities. The number of participants is tremendous. There were no less than 4,000 participants in the contests held in the army, the navy and under the auspices of the Dynamo Society in 1938.

Much attention is paid to endurance contests. There are regular Marathon races, long-distance ski races, cycle races over distances of 2,000 and 2,500 kilometres (1,240 and 1,550 miles), horse runs, long-distance swims of 30, 50 and 60 kilometres (18.6, 31 and 37.2 miles) in the sea, and long-distance ski treks.

Turkmenian horsemen rode from Ashkhabad (Central



Asia) to Moscow, covering a distance of over 10,000 kilometres (6,200 miles). Sportsmen frontier guards cycled 26,000 kilometres (16,000 miles) along the borders of the Soviet union. Sportsmen of the Far East skied to Moscow over a distance upwards of 10,000 kilometres (6,200 miles). Women employees of the Moscow Electrical Equipment Works skied from Moscow to Tobolsk, a distance exceeding 2,000 kilometres (1,240 miles).

Before the Revolution, mountain-climbing in Russia, with so many mighty peaks on her territory, was practically non-existent. From 1829 to 1914, nearly a century, only 59 persons climbed Elbrus, the highest mountain in Europe, and 47 of them were foreigners at that. Between 1877 and 1903, i.e. over a quarter of a century, Russian mountain climbers did not make a single first ascent. Those that were made were accomplished by foreigners.

Touring and mountain-climbing are widely developed in the U.S.S.R. Soviet climbers have scaled all the main peaks in the U.S.S.R. In 1937, twelve Soviet mountain climbers scaled peaks of over 7,000 metres (23,000 feet). In 1938 alone there were 20,000 participants in high mountain climbs.

On the Caucasus, Altai and Tian-Shan last year there were 43 high mountain camps in which 14,000 persons studied the art of mountain climbing.













The mass nature of the physical culture movement in the U.S.S.R. ensures a constant rise of new talent. People who display ability in any field of sport are given proper attention, trainers help them to develop and become expert sportsmen. It should be noted as a very important fact, that recognized masters of sport, champions, do not break with their old contacts but continue to be members of the same sports societies.

The Soviet Government has established a Sportsman of Merit title which is awarded for sporting feats and long records of activity in the sports movement. There are now about a hundred sportsmen in the U.S.S.R. with this title. Many sportsmen have been decorated for outstanding feats.

In Moscow, on the Red Square, before the walls of the Kremlin, an All-Union Sports parade takes place every summer. The leaders of the Government and the Communist Party with J. V. Stalin, who has done so much personally for Soviet sport and Soviet sportsmen, review this parade of happy youth. Sportsmen from all the eleven republics in our Union march into the square. All the nationalities of the great Union of Soviet Socialist Republics are represented. Every republic demonstrates its prowess in sport, its national sports. Boys and girls, mothers and fathers with their children take part. Through the Red Square march Russians, Ukrainians, Georgians, Armenians, Byelorussians, Tajiks and sportsmen of other nationalities. Here too you will see Kirghizian falconers with their huge trained eagles. The exultant young folk march past with song, saluting their Government and J. V. Stalin, the leader of the Revolution.

They are living proof of his own words: "A new generation of workers is rising in the U.S.S.R., healthy, buoyant in spirit, able to make our Soviet country a tower of strength."

# POSITION OF THE U.S.S.R. IN WORLD PRODUCTION

	GRAIN	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>
	AGRI. MACHINERY	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>
	BET SUGAR	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>
	TRACTORS	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>
	GOLD	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>
	IRON ORE	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>
	MACHINES	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>
	FREIGHT CARS	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>
	ELECTRICITY	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>
	S. PHOSPHATE	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>
	STEEL	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>
	COAL	4 <sup>th</sup>	4 <sup>th</sup>	4 <sup>th</sup>	4 <sup>th</sup>



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